

Registered at the G.P.O. for Transmission to Canada and Newfoundland by Magazine Post.

VOL. 27. Ser. A. Title-page and Index. [Issued November 1940.]

THE REVIEW OF APPLIED ENTOMOLOGY.

SERIES A: AGRICULTURAL.

**ISSUED BY THE IMPERIAL
INSTITUTE OF ENTOMOLOGY.**

**LONDON :
THE IMPERIAL INSTITUTE OF ENTOMOLOGY,
41, QUEEN'S GATE, S.W.7.**

Price 6s. net.

All Rights Reserved.

IMPERIAL INSTITUTE OF ENTOMOLOGY.

Executive Council.

F. J. DU TOIT, *Chairman*, Union of South Africa.
Dr. WILLIAM ALLEN, *Vice-Chairman*, Canada.
Sir DONALD FERGUSON, K.C.B., United Kingdom.
F. L. McDougall, C.M.G., Australia.
NEVILL L. WRIGHT, F.I.C., D.I.C., New Zealand.
J. M. ADAMS, F.R.C.Sc. (I), Eire.
D. JAMES DAVIES, C.B.E., Newfoundland.
SHAMALDHARI LAL, India and Burma.
B. F. WRIGHT, Southern Rhodesia.
J. A. CALDER, C.M.G., Colonies, Protectorates and Mandated Territories.
Sir DAVID CHADWICK, K.C.M.G., C.S.I., C.I.E., *Secretary*.

Director.

Sir GUY A. K. MARSHALL, C.M.G., F.R.S.

Assistant Director and Editor.

Dr. S. A. NEAVE, O.B.E.

Assistant Director.

Dr. W. R. THOMPSON, F.R.S.

Head Office—British Museum (Natural History), Cromwell Road,
London, S.W.7.

Publication Office—41, Queen's Gate, London, S.W.7.

INDEX OF AUTHORS.

A reference in heavy type indicates that a paper by the author has been noticed.

- Abbott, W. S., 531, 609.
 Abraham, R., **100, 113.**
 Adamson, A. M., **55, 56.**
 Aino, S., **442.**
 Ainslie, C. N., **260.**
 Ainsworth, G. C., **671.**
 Akabori, J., **208.**
 Akashi, M., **620.**
 Akimova, A. S., **474.**
 Akita, N., **338.**
 Alden, C. H., **623.**
 Aldrich, J. M., 294.
 Alibert, H., **347.**
 Allan, W., **222, 492.**
 Allen, C. E., **541.**
 Allen, M. W., **596.**
 Allen, N., **254.**
 Allen, T. C., **32, 33.**
 Allman, S. L., **345.**
 Almy, E. F., **421.**
 Ambros, W., 400, **564.**
 Amer, A., **508.**
 Anagnostopoulos, P. T., **452, 453.**
 Anderson, L. D., **530.**
 Antongiovanni, E., **174.**
 Aoyama, T., **618.**
 App, B. A., **328.**
 Appel, O., **290.**
 Arant, F. S., **82.**
 Araujo, R. L., **22, 23.**
 Arbuthnot, K. D., **80.**
 Arikado, H., **444.**
 Arkhangel'skiĭ, P. P., **474.**
 Arndt, W., **8.**
 Arnim, von, 299.
 Asquith, D., **79.**
 Austin, M. D., **1, 2, 332.**
 Autuori, M., **34.**
 Avens, A. W., **139.**
 Ayyar, T. V. Ramakrishna, **129, 392, 448.**
- Babers, F. H., **81.**
 Bach, P. H. De, **597.**
 Back, E. A., **640, 648.**
 Backhouse, J. R. C., **638.**
- Baerg, W. J., **178.**
 Bailey, S. F., **410.**
 Baker, E. W., **569.**
 Balachowsky, A., **357, 392, 689.**
 Balch, R. E., **368, 647, 662.**
 Ballard, E., **127.**
 Baranov, N., **263.**
 Barber, G. W., **179, 430.**
 Barber, T. C., **416.**
 Barnes, H. F., 320, **353, 556, 635, 672.**
 Barry, J. J., **180.**
 Bartlett, K. A., **670.**
 Basheer, M., **575.**
 Batra, R. N., **486.**
 Baudyš, E., **468.**
 Bawden, F. C., **624.**
 Beadle, L. D., **32.**
 Beaulne, J. I., **601.**
 Beaumont, J. H., **188.**
 Bebbington, A. G., **222, 492.**
 Becker, G., **204, 268, 564.**
 Becker, G. G., **53.**
 Becker, W. B., **418.**
 Becnel, I. J., **372.**
 Bedard, W. D., **67.**
 Bedford, H. W., **572.**
 Beeson, C. F. C., **337, 611, 612.**
 Beffa, G. Della, **5.**
 Bégué, H., **224.**
 Beĭ-Bienko, G. Ya., **315, 453.**
 Bell, A. F., **185.**
 Benton, C., **284.**
 Beran, F., **65, 467.**
 Berezhkov, R. P., **694.**
 Berg, V. L., **543.**
 Bergenstamm, J. E., 294.
 Bernhardt, E., **495.**
 Berry, P. A., **132, 324.**
 Bertand-Rossi, **224.**
 Bertram, L., **398.**
 Bess, H. A., **598.**
 Besse, H., **478.**
 Betrem, J. G., **522, 523.**
 Bezrukova, T. I., **627.**
 Bezrukova, V. F., **684.**
 Bhatia, B. M., **612.**

- Bhatia, D., 559.
 Bhatia, H. L., 228.
 Bhatia, M. L., 628.
 Bieberdorf, G. A., 257.
 Bienko, G. Ya. Bei-, 453.
 Bigger, J. H., 67, 285.
 Billings, S. C., 140.
 Bissell, T. L., 76.
 Bisset, G. A., 456.
 Blanton, F. S., 652.
 Blattný, C., 468, 469, 470.
 Bleton, C. A., 124, 196.
 Bliss, C. I., 66, 243, 309, 531.
 Blockówna, H., 162.
 Blodgett, F. M., 53.
 Blunck, H., 100, 314, 334, 495, 608.
 Blyumberg, G. V., 310.
 Bobkov, S. D., 309.
 Boczkowska, M., 105.
 Bodenheimer, F. S., 336.
 Bodnár, J., 171, 458.
 Boelkel, H., 336.
 Bogunova, M. V., 303.
 Böhme, H. Müller-, 158, 357.
 Böhm, W., 300.
 Bolens, G., 106.
 Bolwig, N., 518.
 Bondar, G., 22, 290, 566, 661, 662.
 Böning, K., 110.
 Bonnamour, S., 167.
 Borden, A. D., 432.
 Borkhsenius, N. S., 57, 680.
 Börner, C., 99, 392, 688.
 Bos, J., 578.
 Botkin, C. W., 273.
 Böttcher, F. K., 101, 231, 402.
 Bottel, A. E., 239.
 Bouet, G., 572.
 Bovey, P., 169, 336.
 Bovien, P., 117, 518.
 Bowmaker, P. A., 489, 491.
 Bowman, B. M., 475.
 Box, H. E., 182, 659.
 Boyce, A. M., 55, 261, 425, 432, 459, 649, 650.
 Bradley, W. G., 80.
 Bramstedt, F., 100, 300.
 Brannon, L. W., 285, 595.
 Bratley, H. E., 654.
 Brauer, F., 294.
 Brédo, H. J., 476, 482, 483, 486.
 Brémond, P., 193, 359.
 Breny, R., 236.
 Brewer, E. G., 138.
 Brierley, P., 369.
 Brightwell, S. T. P., 263.
 Brindley, T. A., 456.
 Brink, R. A., 33.
 Brittin, G., 224.
 Britton, W. E., 176.
 Bromley, S. W., 528.
 Brooks, J. W., 32.
 Brown, G. T., 411.
 Brownlee, J. M., 258.
 Brubaker, R. W., 250.
 Bruneteau, J., 690.
 Brunson, A. M., 341.
 Brunson, M. H., 84.
 Bua, G., 98.
 Buchanan, L. L., 594.
 Buchanan, W. D., 644.
 Buchner, P., 401.
 Bue, I. G., 651.
 Bugdanov, G. B., 148.
 Buhl, C., 457, 511.
 Buikhovtzeva, 318.
 Burgess, A. F., 139, 615.
 Burnham, J. C., 104.
 Burr, M., 455.
 Busbey, R. L., 456.
 Busck, A., 188.
 Bushnell, R. J., 80.
 Busnel, R. G., 169.
 Butac, F. L., 183.
 Butler, C. G., 61, 265.
 Butovitsch, V., 122, 219.
 Buzacott, J. H., 88, 187.
 Buzin, N., 403.
 Bynum, E. K., 370.
 Cairaschi, E. A., 622.
 Caldwell, N. E. H., 329.
 Calinisan, M. R., 365.
 Callan, E. McM., 562, 563.
 Callenbach, J. A., 32, 33.
 Cameron, A. E., 122.
 Cameron, E., 38, 669.
 Campbell, R. E., 410.
 Candioli, P., 235, 515.
 Candura, G. S., 172, 198.
 Canzanelli, A., 198, 199, 234, 516.
 Capen, R. G., 280.
 Cardoso, J. G. A., 479.
 Caresche, L., 49.
 Carnéri, A., 175.
 Carril, I. M. Del, 476.
 Carter, R. H., 280, 456.
 Carter, Walter, 624.

- Cassab, A., 509.
 Cassidy, T. P., 416.
 Cassil, C. C., 188, 280.
 Castagne, E., 294.
 Castets, G., 168.
 Caudle, H. B., 391.
 Chaboussou, F., 622.
 Chamberlain, E. E., 546.
 Chamberlain, T. R., 32.
 Chamberlin, F. S., 251, 254.
 Chamberlin, J. C., 325.
 Chandler, S. C., 526.
 Chang (Tsung-ping), 667.
 Chapman, P. J., 382.
 Charkovskii, M. P., 678.
 Charles, V. K., 392.
 Charter, C. F., 384.
 Chauvin, R., 48, 104, 604.
 Chen (Chung-liang), 613.
 Cheo (Ming-tsang), 614.
 Cherian, M. C., 127, 494, 561, 575.
 Chernuishev, P. K., 318.
 Chesnokov, P. G., 439.
 Chiaromonte, A., 175, 478.
 China, W. E., 126.
 Chisholm, R. D., 241.
 Chiu (Shin-foon), 531, 624.
 Christian, M. B., 248, 370.
 Chuginin, Ya. V., 683.
 Chuvakhin, V. S., 160.
 Clark, A. F., 329.
 Clark, J. C., 243.
 Claus, A., 582.
 Clausen, C. P., 499.
 Cleare, L. D., 328, 505, 524.
 Cockerham, K. L., 249.
 Cohen, M., 96.
 Collins, D. L., 77.
 Compere, H., 39, 503, 506.
 Compton, C. C., 141.
 Comstock, J. A., 592.
 Cook, M. T., 280.
 Corl, C. S., 310.
 Cosolo, S., 199.
 Costa Lima, A. da, 132, 183.
 Costantino, G., 5, 516.
 Cosway, C. A., 224.
 Cottier, W., 21, 56, 277, 336, 523, 550.
 Cotton, R. T., 341.
 Couch, J. N., 242.
 Couturier, A., 194, 390.
 Cox, J. A., 141.
 Crandell, H. A., 78.
 Crawford, H. J., 538.
 Creighton, J. T., 258.
 Cristóbal, U. Lopez, 237, 601.
 Crossman, S. S., 615.
 Crothwait, S. L., 532.
 Cummins, J. E., 509.
 Curl, L. F., 242.
 Curran, C. H., 57, 567.
 Currie, G. A., 282.
 Currie, J. H., 383.
 Cushman, R. A., 86.
 da Costa Lima, A., 132, 183.
 da Fonseca, J. Pinto, 34, 86, 238.
 Dahms, R. G., 261, 456.
 Dashkevich, B. N., 308.
 Davidson, J., 345.
 Davies, W. M., 550, 562, 633.
 Davis, A. C., 79, 260.
 Davis, J. J., 407, 600.
 Dawson, J. C., 139.
 Day, M. F., 282.
 De Bach, P. H., 597.
 Debauche, H., 486.
 Decker, G. C., 138.
 Decoursey, J. D., 75.
 Deen, O. T., 249.
 de Fluiter, H. J., 161.
 Del Carril, I. M., 476.
 De Leon, D., 567.
 Deleuze, J., 349.
 Della Beffa, G., 5.
 DeLong, D. M., 82, 421.
 de Meijere, J. C. H., 94.
 De Santis, L., 23, 24.
 de Stefani, T., 452.
 Diakonoff, A., 50, 205.
 Dibble, C. B., 408.
 Dietz, H. F., 532.
 Distant, W. L., 566.
 Ditman, L. P., 336, 497.
 Djou, Y. W., 129.
 Dmitriev, A. K., 150, 308.
 Dodonov, B. A., 310.
 Doeksen, J., 233, 234, 268.
 Dotti, F., 97, 104, 197.
 Doucette, C. F., 541.
 Douglas, J. R., 412.
 Douglas, W. A., 537.
 Dozier, H. L., 539, 643.
 Drake, C. J., 138.
 Driggers, B. F., 536.
 Duarte, A. J., 264, 456, 479.
 Ducker, H. C., 222.
 Dugas, A. L., 373.
 Dumbleton, L. J., 159, 548, 550.

- Dunnam, E. W., 243.
 du Plessis, C., 92, 93.
 Dussy, J., 349.
 Dyk, A., 400.
 Dykstra, T. P., 83.

 Eastham, J. W., 66.
 Eckstein, K., 391, 563, 568.
 Eddy, C. O., 370, 372, 373, 422.
 Edwards, W. D., 498.
 Edwards, W. H., 181, 238, 693.
 Efimenko, M. S., 407.
 Eggers, H., 522.
 Eichler, W., 109.
 Éidel'man, Z. M., 680.
 Ellisor, L. O., 258, 370, 371, 372.
 Emchuk, E. M., 405, 406.
 Emel'yanova, N. A., 43.
 Emerson, A. E., 384.
 Emerson, H. E., 55.
 Endo, T., 17.
 English, L. L., 259, 642.
 Enser, K., 171.
 Esaki, T., 362, 445, 446.
 Escherich, K., 110, 230.
 Essig, E. O., 34, 261, 431, 590.
 Evans, J. W., 20, 21, 184, 226, 510.
 Everly, R. T., 280, 455.
 Evlakhova, A. A., 308.
 Ewing, H. E., 34, 224.
 Ewing, K. P., 244, 245, 538.
 Ext, W., 171.
 Eyer, J. R., 31.

 Faes, H., 438.
 Fahey, J. E., 273, 539, 643.
 Fahringer, J., 219, 615.
 Fallscheer, H., 383.
 Fantham, H. B., 459.
 Farrar, M. D., 67, 70, 260.
 Farstad, C. W., 176, 368.
 Fedorov, S. M., 43.
 Felt, E. P., 336, 499, 528.
 Fennah, R. G., 24.
 Fenton, F. A., 257, 340, 420, 427, 456.
 Ferla, A. La, 473.
 Fernando, M., 493, 638.
 Ferrant, V., 106.
 Ferrière, C., 506.
 Ferris, G. F., 290.
 Feytaud, J., 106, 107, 155, 193, 350, 583, 622.

 Fiala, F., 468.
 Figueiredo jr., E. R., 23.
 Finck, E. von, 580, 581.
 Fink, D. E., 142.
 Fintzescu, G., 357.
 Fischer, A., 201.
 Fischer, H., 353, 466.
 Fischer, W., 115.
 Fisher, R. A., 240.
 Fishkis, I. S., 686.
 Fitzgerald, D. Vesey-, 335.
 Flachs, K., 583.
 Flanders, S. E., 144, 424, 595.
 Fleming, W. E., 104.
 Fletcher, R. K., 413.
 Flint, W. P., 67, 70, 284, 285, 408, 655.
 Floyd, E. H., 258.
 Fluiter, H. J. de, 161.
 Fluke, C. L., 32.
 Folsom, J. W., 341.
 Fonseca, J. Pinto da, 34, 86, 238.
 Forsslund, K. H., 518.
 Francke-Grosman, H., 401.
 Franssen, J. J., 104, 396.
 Franssen, C. J. H., 227, 280, 523.
 Franzke, A., 204.
 Frappa, C., 14, 62, 543, 637, 664.
 Frear, D. E. H., 52.
 Freeman, P., 360.
 Freitag, J. H., 590.
 Freudenstein, K., 101.
 Frey, W., 635.
 Frézal, J., 191.
 Frickhinger, H. W., 606.
 Friend, R. B., 73, 342.
 Froggatt, J. L., 277, 544.
 Frost, S. W., 80.
 Fukaya, M., 619.
 Fukaya, S., 442.
 Fukuda, J., 620.
 Fukuda, S., 443.
 Fuller, M. E., 56, 57.
 Fulmek, L., 45.
 Fulton, R. A., 78.
 Furniss, R. L., 498.
 Furugori, N., 225.
 Fyfe, R. V., 89, 282.

 Gäbler, H., 218, 334, 400, 579.
 Gahan, A. B., 434, 565.
 Gaines, J. C., 242, 245, 413, 417.
 Gaines, R. C., 243, 246.
 Gambrell, F. L., 529.
 Garman, P., 428, 429.

- Garthwaite, P. F., 692.
 Garus, J., 45.
 Gauze, G. F., 161.
 Gay, F. J., 89.
 Gayden, J. H., 258.
 Geijskes, D. C., 301, 567.
 Geisthardt, G., 521.
 Ghesquière, J., 572.
 Ghidini, G. M., 174.
 Gibson, A., 476, 477, 485.
 Gibson, K. E., 418.
 Gieysztor, M., 438.
 Gillett, J. A., 412.
 Gilmer, P. M., 247.
 Gilmore, J. U., 252, 253.
 Gilyarov, M. S., 44, 679.
 Giorgi, D., 198.
 Girault, A. A., 294.
 Girth, H. B., 165.
 Glaser, R. W., 165.
 Glasgow, H., 531.
 Gnadinger, C. B., 310.
 Gobeil, A. R., 275, 463.
 Goetsch, W., 87.
 Goidanich, A., 173, 174, 472.
 Goncharova, A. A., 311.
 Gontarski, H., 630.
 Gooden, E. L., 541.
 Goodhue, L. D., 241, 528, 541.
 Goodliffe, F. D., 562.
 Goodwin, M. W., 534.
 Gorham, R. P., 601.
 Gösswald, K., 112, 231, 335, 688.
 Götz, B., 7, 496, 582.
 Gould, E., 188.
 Goux, L., 48, 103, 235.
 Goytia, A., 543.
 Gradojević, M., 479.
 Graham, A. B., 408.
 Graham, C. P., 259.
 Graham, J. J. T., 392.
 Graham, L. T., 370.
 Graham, S. A., 527.
 Grandi, G., 473.
 Grandori, L., 199.
 Grandori, R., 197, 200.
 Gray, K. W., 325.
 Gregor, F., 145.
 Grigor'eva, T. G., 317.
 Grison, P., 622.
 Griswold, C. L., 651.
 Grivanov, K. P., 554.
 Grosmann, H. Francke-, 401.
 Groves, K., 383.
 Grunberg, A., 512.
 Gui, H. L., 342.
 Guichard, F., 347.
 Gunn, D. L., 224.
 Gurney, W. B., 130.
 Guy, H. G., 532.
 Haasis, F. A., 652.
 Hadersold, O., 113, 352.
 Haenseler, C. M., 536.
 Hafiz, H. A., 385.
 Hahmann, K., 298.
 Hall, W. J., 14.
 Haller, H. L., 135.
 Haller, M. H., 188.
 Hama, T., 619.
 Hamiel, G. R., 273.
 Hamilton, C. C., 74.
 Hammer, O. H., 533.
 Hanna, A. D., 512.
 Hanno, K., 400.
 Hansen, J. W., 649.
 Hansen, L. L., 31.
 Hanson, A. J., 178.
 Hanson, H. S., 504.
 Hardy, A. C., 167.
 Hardy, D. E., 596.
 Hardy, G. H., 294.
 Hardy, J. E., 262, 392, 670.
 Harel, 10.
 Harmston, F. C., 29, 427.
 Harrington, C. D., 33.
 Harris, C. S., 280.
 Harris, K. H., 342.
 Harris, W. V., 492.
 Harrison, P. K., 250, 371.
 Hartley, B. J., 222.
 Hartnack, H., 382.
 Hartzell, A., 272.
 Hartzell, F. Z., 529, 534.
 Harukawa, C., 624.
 Hase, A., 354.
 Hatch, M. H., 78, 525, 592.
 Haug, G. W., 81.
 Haupt, W., 158.
 Hawkins, J., 650.
 Hawkins, L. A., 53.
 Hayes, W. P., 75.
 Headlee, T. J., 137.
 Hean, A. F., 360.
 Heikertinger, F., 160.
 Heinrich, C., 511.
 Heinze, K., 157, 267, 334, 636, 686, 687.
 Heiss, E. M., 82.
 Helson, G. A. H., 639.
 Hely, P. C., 278.

- Hempel, A., 48.
 Hennig, W., 113.
 Henrard, P., 572.
 Hensill, G. S., 409.
 Hers, J., 486.
 Hespeler, O., 203.
 Hey, G. L., 236.
 Hicock, H. W., 73.
 Hildebrand, A. A., 276.
 Hille Ris Lambers, D., 224, 578.
 Hilmy, A. L., 506, 508.
 Hiraiwa, Y., 440.
 Hirayama, S., 444.
 Hixson, E., 79.
 Hockenyos, G. L., 422.
 Hodson, A. C., 597, 646.
 Hodson, W. E. H., 512, 519.
 Hoffmann, A., 225.
 Hofmann, C., 48, 231, 512.
 Hogan, T. W., 389.
 Holloway, J. K., 426.
 Hopkins, A. D., 325.
 Hopkins, J. C. F., 125.
 Hora, A. M., 585.
 Hori, H., 446.
 Hori, M., 104.
 Hornbostel, W., 334.
 Hoskins, W. M., 411.
 Hough, W. S., 533.
 Houser, J. S., 83.
 Howe, E. W., 500.
 Hsiao, Tsai Yu, 643.
 Huber, G. A., 280.
 Hudault, E., 691.
 Huggins, H. C., 116.
 Hughes, A. M., 456.
 Hughes, T. E., 456.
 Huitema, W. K., 624.
 Hukkinen, Y., 160.
 Hülsenberg, H., 513.
 Hundertmark, A., 223.
 Hunt, G. M., 180.
 Hunter, L., 237.
 Hunter, W. P., 258.
 Husain, M. A., 560.
 Husni, M., 508.
 Hussein, M., 481.
 Hutchinson, H., 488.
 Hutson, J. C., 638.
 Hyslop, J. A., 137.
 Il'inskaya, L., 304.
 Imamura, S., 555.
 Immelman, M. N. S., 568.
 Ingram, J. W., 372, 656.
 Inouye, M., 91, 339.
 Isaac, P. V., 575.
 Isaakidès, C. A., 171, 478.
 Isely, D., 165, 178, 327.
 Ishibashi, R., 440.
 Ishii, T., 91, 620.
 Ishikura, S., 557.
 Ishitani, F., 443.
 Isitani, H., 208.
 Ivanov, S. P., 406.
 Iwasa, T., 616.
 Iyriboz, Nihat, 452.
 Jack, R. W., 124.
 Jacoby, M., 271, 567.
 Jacques, C., 131.
 Jancke, O., 111, 155, 458, 689.
 Janes, M. J., 651.
 Janisch, E., 98, 314, 564.
 Janjua, N. A., 575.
 Jannone, G., 570.
 Jary, S. G., 1, 2, 332, 519.
 Jaynes, H. A., 372, 656, 658.
 Jeffreys, F. J., 37, 548.
 Jepson, W. F., 611.
 Jež, S., 350.
 Jobbins, D. M., 137.
 Johansson, E., 121.
 Johnpulle, A. L., 493.
 Johnson, A. C., 53.
 Johnson, G. V., 420.
 Jones, E. P., 14, 15, 16.
 Jones, E. T., 374, 375.
 Jones, G. D., 569.
 Jones, M. P., 408.
 Jones, S. C., 498.
 Jung, K., 104.
 Kabakchi, B. P., 152.
 Kabos, W. J., 494.
 Kaburagi, T., 441.
 Kac, 471.
 Kadow, K. J., 534.
 Kagan, M., 261.
 Kagy, J. F., 649, 653.
 Kalandra, A., 469.
 Kalashnikov, K. Ya., 684.
 Kalshoven, L. G. E., 48, 227, 493.
 Kamiński, E., 9.
 Kamiya, K., 209, 211.
 Kanda, S., 624.
 Kangas, E., 8.
 Kariya, S., 361, 616.
 Karlash, K., 403.

- Karr, E. H., 648.
 Kaston, B. J., 68.
 Katz, Ya., 403.
 Kaufmann, O., 203, 204.
 Kaven, G., 232.
 Kawaai, I., 225, 555.
 Kawano, T., 339, 360.
 Kearns, C. W., 141.
 Kearns, H. G. H., 396.
 Keifer, H. H., 33, 288.
 Kéler, S., 162.
 Kelsall, A., 662.
 Kemp, H. K., 292.
 Kemper, H., 101, 201, 513.
 Kerkow, 203.
 Kerr jr., T. W., 425.
 Kharitonov, Ya., 683.
 King, K. M., 543.
 King, M. E., 395.
 Kirchner, H. A., 457.
 Kirkpatrick, A. F., 343.
 Klemm, M., 336.
 Klingstedt, H., 522.
 Klinkowski, M., 495.
 Knight, Harry H., 566.
 Knowlton, G. F., 29, 31, 48, 426, 427, 596.
 Knust, H. G., 88.
 Kobayashi, M., 210.
 Köhler, E., 156.
 Koidsumi, K., 615.
 Kojima, T., 441.
 Kolotov, D. G., 454.
 Kolubajiv, S., 517.
 Komárek, J., 170.
 Kôno, H., 19, 91, 211, 339, 443, 615.
 Koreishi, K., 206.
 Korsakov, M. N. Rimskii-, 214.
 Kostandyan, L. V., 320.
 Kovačević, Z., 10.
 Kowalczyk, S. A., 392.
 Koyama, T., 207, 361.
 Kozhanchikov, I. V. (Kozhantshikov, I. W.), 37, 147, 228.
 Kozikowski, A., 676.
 Kozlova, E. N., 41.
 Kreiter, E. A., 454.
 Krivin, B. G., 303.
 Kumazawa, T., 212.
 Kuniike, G., 6, 47, 64, 399.
 Kurdyumov, N. V., 311.
 Kurentzov, A. I., 456.
 Kuroda, H., 620.
 Kuroda, M., 207, 443.
 Kuroda, S., 445.
 Kurosawa, M., 50, 616.
 Kuryllo, A., 162.
 Kuwayama, S., 19, 340, 440, 618.
 Kuz'min, M., 322.
 Kuznetzov, 318.
 Kuznetzova, L. A., 313.
 Kvičala, B., 145.
 Laan, P. A. van der, 17.
 Lacotte, 357.
 Lacroix, D. S., 177.
 La Ferla, A., 473.
 Lafon, M., 624.
 LaHue, D. W., 427.
 Laing, J., 166.
 Lal, K. B., 385, 575.
 Lamas, C., J. M., 385.
 Lambers, D. Hille Ris, 224, 578.
 Lamerson, P. G., 165, 166.
 Lamiman, J. F., 409.
 Langford, G. S., 532.
 Langston, J. M., 644.
 Latta, R., 419.
 Laue, G., 102.
 Lazarevskii, M., 403.
 Lea, A., 62, 387.
 Lean, O. B., 13.
 Lebedev, M. I., 623.
 Leece, C. W., 87.
 Leefmans, S., 514.
 Lehker, G. E., 408.
 Lehmann, H. C., 457.
 Leib, E., 204.
 Leon, D. De, 567.
 Leonard, M. D., 531.
 Le Pelley, R. H., 665.
 Lepesme, P., 196, 486, 584, 585.
 Lesnikovskii, G. M., 680.
 Leuzinger, H., 169.
 Lever, R. J. A. W., 212, 213, 365, 366, 641.
 Lima, A. da Costa, 132, 183.
 Lin (Ch'ang-Shan), 667.
 Lindblom, A., 355.
 Lindemuth, K., 511.
 Lindgren, D. L., 343.
 Lindinger, L., 223.
 Lindsay, E. A., 510.
 Linsley, E. G., 160.
 List, G. M., 72, 408.
 Little, E. C. S., 22.
 Liu (Chi-ying), 613, 614.
 Lizer y Trelles, C. A., 87.
 Lloyd, D. C., 302.

- Lobdell, R. N., 656.
 Lombardi, D., 471.
 Lopez Cristóbal, U., 237, 601.
 Lounsky, J., 605.
 Lovibond, B., 95.
 Lowman, M. S., 134.
 Lucchese, E., 4, 629.
 Ludwig, D., 336.
 Lukash, I. I., 322.
 Luk'yanovich, F. K., 313.
 Lupo, V., 48, 511.

 Ma (Tung-lwen), 614.
 McCay, C. M., 624.
 McClean, H. C., 642.
 McCoy, E. E., 165.
 McCrory, S. A., 133.
 McDaniel, E. I., 28, 461.
 McGarr, R. L., 244.
 MacGill, E. I., 672.
 McKay, M. B., 369.
 McKinney, K. B., 142.
 McKinstry, A. H., 222.
 McLane, L. S., 416.
 McNally, A. G., 601.
 McOmie, W. A., 597.
 Madden, A. H., 251.
 Madel, W., 7, 521.
 Mader, E. O., 53.
 Maeda, T., 210.
 Maercks, H., 519.
 Magie, R. O., 593.
 Mahdihassan, S., 113.
 Makino, M., 91.
 Makkus, W., 158.
 Malenotti, E., 115, 295.
 Malloch, J. R., 294.
 Mannheims, B., 398.
 Marcovitch, S., 104, 425, 426.
 Marcu, O., 355.
 Mariani, G., 197.
 Mariani, M., 630.
 Marloth, R. H., 330.
 Marshall, James, 383.
 Marshall, Joseph, 487.
 Martelli, M., 173, 174.
 Martin, C. H., 68, 190.
 Martin, H., 396.
 Marushev, A. I., 554.
 Masera, E., 224.
 Masi, L., 199.
 Mason, T. G., 220, 222.
 Masee, A. M., 160, 395, 636.
 Mathewson, A. A., 287.
 Mathlein, R., 118.
 Mattras, H., 357.

 Maxwell, K. E., 55.
 Mayné, R., 106, 107.
 Meier, N. F., 588.
 Meijere, J. C. H. de, 94.
 Melis, A., 296.
 Melville, A. R., 665.
 Mendes, L. O. T., 34, 188, 289.
 Menozzi, C., 301.
 Mercet, R. G., 40.
 Merkel, L., 298.
 Mesnil, L., 167, 624.
 Metalnikov, S., 307.
 Metcalf, C. L., 655.
 Metzger, F. W., 104.
 Meyer, E., 511, 608.
 Miao, C. P., 360.
 Michelbacher, A. E., 411, 431, 569.
 Micklem, T., 94.
 Middelburg, H. A., 493.
 Middlekauff, W. W., 279.
 Middleton, W., 53, 138.
 Miestinger, K., 467.
 Milam, J., 652.
 Miles, W. H., 96.
 Milisavl'evic, D., 494.
 Miller, D., 37, 449.
 Miller, F. W., 392.
 Miller, L. W., 293.
 Milne, P. S., 167.
 Minkiewicz, S., 163, 694.
 Misaka, K., 18, 206.
 Mistikawi, A. M., 481.
 Mitchell, B. L., 488.
 Miwa, Y., 205, 558.
 Miyake, T., 208, 617.
 Mizutani, Y., 209.
 Mo, Tjoa Tjien, 347.
 Modena, M. P., 199.
 Monro, H. A. U., 416, 541.
 Moore, M. H., 456.
 Morae, C., 238.
 Moreland, R. W., 244, 417.
 Moretti, G. P., 199.
 Morgan, W. L., 57.
 Morgenthaler, O., 169.
 Morimoto, S., 361.
 Morita, T., 557.
 Moriyama, C., 557.
 Moriyama, T., 618.
 Moroshkina, O. S., 474.
 Morrill, A. W., 177.
 Morris, H. M., 270, 317.
 Morrison, H., 392.
 Morrison, L., 547.
 Moss, E. G., 254.

- Mossop, M. C., 125, 637.
 Mote, D. C., 643.
 Motzkus, E., 203.
 Muesebeck, C. F. W., 133, 324, 461, 614.
 Mühle, E., 466.
 Mukerji, D., 280.
 Mukerji, S., 486.
 Müller, H., 520.
 Muller, H. R. A., 280.
 Muller, Klothilde, 230.
 Müller-Böhme, H., 158, 357.
 Munger, F., 419.
 Mungomery, R. W., 88.
 Munro, J. A., 33, 70, 71, 651, 655.
 Munro, J. W., 265, 336.
 Murachev, M., 153.
 Murat, M., 487.
 Murphy, A. M., 286.
 Murray, C. W., 188.
 Murray, F. V., 104.

 Nägeli, W., 518.
 Nakayama, S., 225, 362.
 Narayanan, E. S., 558.
 Nash, R. W., 540.
 Nawa, U., 207, 361.
 Nefedov, N. I., 386.
 Negrul', A., 403.
 Nelson, O. A., 643.
 Nepveu, P., 621.
 Nettles, W. C., 408.
 Neu, W., 608.
 Nevskii, V. P., 552, 587, 610.
 Nichols, R. F. W., 153.
 Nicholson, A. J., 476.
 Nikitina, T. F., 316.
 Niklas, O. F., 581, 632.
 Nikolskii, V. L., 152.
 Nitsche, G., 688.
 Nixon, G. E. J., 19, 263, 505, 604, 632, 669.
 Noble, N. S., 293, 448, 564.
 Noble, R. J., 448.
 Noguchi, T., 440.
 Nolte, H. W., 170, 267, 298, 335, 401, 466.
 Norris, K. R., 131.
 Notini, G., 117.
 Notley, F. B., 127.
 Novienko, A. I., 318.
 Nowell, W., 290.
 Nowicki, S., 232, 403.
 Nozu, R., 555, 556.
 Nunberg, M., 676.

 Obarski, J., 162.
 Odagaki, S., 617.
 Odera, S., 617.
 Ogijewicz, B., 350.
 Ogilvie, L., 671.
 Ohta, Y., 210, 339.
 Oishi, T., 440.
 Okamoto, D., 619.
 Oliver, R. W., 25.
 O'Neill, W. J., 536.
 Onoe, T., 208, 620.
 Oosterling, H., 577.
 Orelli, O. Schneider-, 160.
 Osborn, H., 527.
 Osborn, H. T., 370.
 Osborn, W. M., 274.
 Osburn, M. R., 256, 257.
 Osima, K., 618.
 Osterberger, B. A., 248, 370, 371.
 Otero, J. I., 280.
 Oudemans, A. C., 301.
 Ovchinnikova, M. I., 151.
 Ovinge, A., 233, 465.
 Ozaki, S., 620.
 Ozols, E., 47.

 Paikin, D. M., 149.
 Painter, R. H., 341.
 Palmer, M. A., 104, 542.
 Paniagua, S., 477.
 Pape, H., 437.
 Pappenheim, E., 49.
 Parfent'ev, V. Ya., 321.
 Parham, B. E. V., 213.
 Parisi, E., 199.
 Park, M., 493.
 Park, T., 27.
 Parker, J. H., 274.
 Parker, J. R., 240.
 Parker, R. L., 165, 166.
 Parks, T. H., 83, 407.
 Parnell, F. R., 221.
 Parsons, F. S., 222, 223, 487, 488.
 Pasquier, R., 480.
 Patay, R., 584.
 Patch, L. H., 645.
 Paterson, N. F., 60.
 Paul, L. C., 543.
 Pawłowicz, J., 438.
 Peacock, A. D., 176.
 Pearce, G. W., 139.
 Pearson, E. O., 489.
 Peat, J. E., 491.

- Pechuman, L. L., 77.
 Peirson, H. B., 275.
 Pemberton, C. E., 90, 366.
 Pengelly, R. C., 27.
 Pepper, B. B., 179, 536.
 Persing, C. O., 425, 649, 653.
 Pescott, R. T. M., 90, 187, 389.
 Petch, C. E., 664.
 Peters, G., 11, 201.
 Petherbridge, F. R., 673.
 Peus, F., 102.
 Pfeffer, A., 469.
 Phillips, W. J., 280.
 Phillips, W. R., 541.
 Phillis, E., 220, 222.
 Pickles, A., 24, 543.
 Pierce, W. C., 255.
 Pierpoint, R. L., 532.
 Pilat, M. V., 307.
 Pinto da Fonseca, J., 34, 86, 238.
 Pitcher, R. S., 2.
 Plank, H. K., 423.
 Plessis, C. du, 92, 93.
 Plumb, G. H., 73.
 Podkanowicz, J., 9.
 Poeteren, N. van, 106, 269.
 Polezhaev, V. G., 551, 585.
 Ponomarenko, D. A., 108.
 Ponomareva, L. M., 304.
 Poole, R. F., 254.
 Poos, F. W., 280.
 Popova, A. I., 315.
 Popova, E. I., 303.
 Porra, J., 392.
 Pospelov, V. P., 306, 455.
 Pospelova, V. M., 678.
 Potter, C., 154, 623.
 Potts, S. F., 143, 645.
 Poutiers, R., 194.
 Powell, H. R., 130.
 Prashad, B., 391.
 Pravdin, F. N., 44.
 Prell, H., 101.
 Prendergast, D. T., 459.
 Prentice, A. N., 222, 491.
 Priesner, H., 507.
 Prikhodkina, T. D., 677.
 Pringle, J. A., 60.
 Printz, Ya., 403.
 Profft, J., 267, 301, 633, 636.
 Prüffer, J., 9, 162.
 Prutenskii, D. I., 153.
 Pruthi, H. S., 50, 228, 558.
 Pussard, R., 266, 458, 621.
 Pyenson, L., 86, 136, 413.
 Quanjer, H. M., 624.
 Quayle, H. J., 342.
 Rademacher, B., 334.
 Rahman, K. W., 503.
 Rainey, R. C., 489.
 Rainwater, C. F., 246.
 Ramakrishna Ayyar, T. V., 129, 392, 448.
 Ramchandra Rao, Y., 484, 485, 559, 624.
 Rau, G. J., 48.
 Raucourt, M., 168, 675.
 Ray, W. W., 427.
 Reed, L. B., 240, 249, 287.
 Reed, R. H., 260.
 Regueral, F. G., 6.
 Reichmuth, W., 102.
 Rekach, V. N., 215.
 Reppert, R. R., 408.
 Richardson, C. H., 134, 537.
 Riggs, D. S., 68.
 Rimskii-Korsakov, M. N., 214.
 Ris Lambers, D. Hille, 224, 578.
 Ritcher, P. O., 32, 592.
 Roark, R. C., 78, 224, 285, 392, 538, 593, 694.
 Roberti, D., 512.
 Robertson, W. H., 66.
 Rodd, A. E., 609.
 Rodd, V. E., 312.
 Rodendorf, B. B., 439.
 Rodionov, Z. S., 551, 585.
 Roebuck, A., 674.
 Roesler, R., 689.
 Rogers, W. S., 395.
 Rolfe, S. W., 3.
 Romanova, V. P., 304.
 Romney, V. E., 422, 593.
 Roos, K., 270.
 Rosenberg, H. T., 38.
 Ross, A. A., 186.
 Ross, E., 569.
 Rossi, Bertand-, 224.
 Rossi, L., 104.
 Rubtzov, I. A., 145, 311, 313, 554.
 Ruffo, S., 471, 473.
 Ruhmann, M. H., 67.
 Rungs, C., 193, 392, 691.
 Rusk, H. W., 539.
 Russo, G., 568.
 Ruszkowski, J., 162.

- Saalas, U., 267, 465.
 Saito, H., 617.
 Saito, S., 209, 616.
 Sakai, K., 207, 445.
 Sakharov, N. L., 109, 406, 680.
 Salaman, R. N., 236.
 Sales, E. M., 434.
 Salman, K. A., 140.
 Salt, G., 35, 390.
 Sameshima, T., 362.
 Sanders, F. R., 126.
 Santis, L. De, 23, 24.
 Saraiva, A. C., 479, 484.
 Sattler, H., 398.
 Sauer, F. G., 22.
 Saugstead, S., 33.
 Saunders, L. G., 27.
 Savchenko, E. N., 406.
 Savitz'ka, Z., 404, 406.
 Sawa, R., 209.
 Sawamoto, T., 443.
 Sazama, R. F., 273.
 Sazonov, P. V., 308.
 Scales, A. L., 246.
 Schaefer, C. A., 323.
 Schaefer, E. E., 91.
 Schaerfenberg, B., 398.
 Schaper, P., 107, 158.
 Schechter, M. S., 135.
 Schedl, K. E., 7, 105, 219, 397, 512.
 Schiffino, L. A., 70, 71.
 Schilder, F. A., 688.
 Schimitschek, E., 218, 522.
 Schiuma, R., 213.
 Schmidt, E., 224.
 Schmidt, G., 437.
 Schmidt, H., 114.
 Schneider, F., 385.
 Schneider-Orelli, O., 160.
 Schrock, M., 240.
 Schuch, K., 112, 202, 204, 520, 520.
 Schultz, E. F., 238.
 Schulze, B., 203.
 Schulze, K., 521.
 Schumacher, F., 218.
 Schwartz, M., 158, 193.
 Schwartz, C. D., 280.
 Schwarz, C. L., 203.
 Schwarz, M., 106, 107.
 Schwerdtfeger, F., 160, 299, 300, 579, 606.
 Scleros, N., 453.
 Scott, L. B., 652.
 Seamans, H. L., 368.
 Searls, E. M., 33, 415.
 Seaton, L., 32, 287, 423.
 Séguy, E., 113, 114.
 Seiferle, E. J., 134, 537.
 Selivanova, S. N., 305.
 Sellke, K., 7, 634.
 Sen, H. K., 128.
 Sen, P., 627.
 Serrano, L. A., 436.
 Servadei, A., 3.
 Severin, H. H. P., 590.
 Seydel, C., 294.
 Shabliovskii, V. V., 42.
 Shadle, A. R., 541.
 Shafik, M., 506, 508.
 Shands, W. A., 254.
 Sharp, S. S., 372, 645.
 Shaw, H., 330, 456.
 Shcherbinovskii, N. S., 681.
 Shepherd, B. L., 374.
 Shevchenko, M. I., 147, 440.
 Shibuya, T., 616.
 Shil'onok, A. A., 610.
 Shinji, O., 104, 224.
 Shiraiwa, H., 616.
 Shmal'ko, V. S., 685.
 Shotwell, R. L., 76, 139, 240.
 Sidel'nik, I., 321.
 Sidorovna, E. P., 305.
 Siebenmann, 517.
 Siegler, E. H., 419, 528.
 Silayan, H. S., 451.
 Silvestri, F., 34, 48, 478, 568, 623.
 Simmonds, H. W., 22.
 Sinel'nikova, Z. S., 552, 623.
 Siraiwa, H., 103, 456.
 Sison, P., 364.
 Skoblo, I. S., 42, 682.
 Skryabina, E. A., 308.
 Slate, W. L., 176.
 Sloan, W. J. S., 187, 281.
 Smallman, B. N., 52.
 Smee, C., 125.
 Smirnov, E. S., 551.
 Smirnova, O. N., 683.
 Smit, C. J. B., 393.
 Smith, A. J., 360.
 Smith, C. E., 250, 370.
 Smith, C. F., 29, 455.
 Smith, F. F., 79.
 Smith, G. L., 246.
 Smith, J. H., 89, 365, 602.
 Smith, K. M., 456, 671.
 Smith, L. E., 142, 419.
 Smith, L. M., 139.
 Smith, R. C., 138, 374, 375.

- Smith, R. H., 143.
 Smith, T. C., 140.
 Smolák, J., 512.
 Snapp, O. I., 255.
 Snelling, R. O., 274.
 Snyder, T. E., 180.
 Sokolov, A. M., 684.
 Soliman, L. B., 160.
 Sonan, J., 206, 339, 340, 446, 447, 618.
 Soraci, F. A., 29, 279.
 Sorauer, P., 113, 290.
 Sorenson, C. J., 29, 48, 462.
 Sorokin, S., 319.
 Spencer, H., 256, 257.
 Spessivtseff, P., 123.
 Speyer, W., 99, 112, 514.
 Spoon, W., 336, 465.
 Squire, F. A., 222, 223.
 Stahel, G., 567.
 Stahler, N., 423.
 Stanley, J., 52, 175.
 Stanley, W. W., 104, 426.
 Stearns, L. A., 534.
 Steer, W., 331, 456.
 Stefani, T. de, 452.
 Steinegger, P., 46.
 Steiner, H. M., 535.
 Steiner, L. F., 272, 643, 653.
 Steiner, P., 520, 583.
 Stellwaag, F., 102, 465, 689.
 Stepantzev, I. N., 147.
 Stepniewska, K., 675.
 Stewart, R., 96.
 Stirrett, G. M., 25.
 Stofberg, F. J., 330.
 Stone, M. W., 410.
 Storey, H. H., 94, 153.
 Storey, I. F., 672.
 Störmer, 157.
 Stracener, C. L., 248, 370.
 Straňák, F., 468.
 Strawiński, K., 163.
 Strickland, A. G., 164, 292.
 Strickland, E. H., 175, 539.
 Stritt, W., 6.
 Strom, L. G., 336.
 Strong, L. A., 261, 376.
 Subklew, W., 224, 694.
 Subramaniam, T. V., 291, 625.
 Sugak, A., 150.
 Sugihara, Y., 211.
 Sugimura, R., 556.
 Sullivan, W. N., 134.
 Summerland, S. A., 374.
 Sundaram, C. V., 561.
 Suster, P. M., 608.
 Sviridenko, P. A., 568.
 Swain, A. F., 343.
 Swain, R. B., 528.
 Sy, M., 114, 159.
 Szymański, W., 162.
 Tadasa, Y., 340.
 Takahashi, H., 206, 339, 446, 447.
 Takahashi, R., 103, 205, 224, 336, 557, 624.
 Takahashi, T., 210.
 Takana, S., 363.
 Tamanuki, K., 615.
 Tammes, F. M. L., 478.
 Tamura, I., 210, 338, 445, 556.
 Tanaka, K., 617.
 Tanko, B., 171.
 Taranukha, M. D., 456.
 Tarwid, K., 161.
 Tattersfield, F., 694.
 Taylor, G. G., 546.
 Taylor, T. H. C., 568.
 Teissier, G., 624.
 Telenga, N. A., 303.
 Tempel, W., 354.
 Tenhet, J. N., 500.
 Terui, M., 225.
 Thalenhorst, W., 65, 354.
 Thielmann, K., 216.
 Thiem, H., 46, 112, 114, 155, 297, 298, 299, 507, 513.
 Thomas, C. A., 511.
 Thompson, W. R., 436.
 Thornley, H. F., 29.
 Thorpe, W. H., 264, 391.
 Thung, T. H., 493.
 Tiburec, 470.
 Tiegs, O. W., 104.
 Tihenko, V. J., 409.
 Tilemans, E., 605.
 Timokhina, N. I., 626.
 Tischler, W., 63, 352, 631.
 Tjoa, Tjien Mo, 347.
 Todd, J. N., 69.
 Tokunaga, M., 624.
 Tompkins, C. M., 273.
 Tonnoir, A. L., 57.
 Toshevnikova, A. G., 309.
 Townsend, C. H. T., 22, 143.
 Townsend, J. F., 429.
 Trägårdh, I., 219, 514.
 Trappmann, W., 100, 202.
 Trehan, K. N., 560.

- Treiman, F. S., 404.
 Trelles, C. A. Lizer y, 87.
 Trembl', 318.
 Trinchieri, G., 481.
 Trouvelot, B., 107, 168, 193, 357.
 Tsai Yu Hsiao, 643.
 Tsuchiya, K., 338.
 Tsumagri, H., 210.
 Tucker, R. W. E., 660.
 Turaev, N. S., 454.
 Turner, N., 71, 456.
 Turner, P. E., 384.
 Tziopkalo, V. L., 406.

 Uichanco, L. B., 478, 485.
 Ulyyett, G. C., 323.
 Underhill, G. W., 141.
 Uspenskiĭ, F. M., 625.
 Uvarov, B. P., 138, 336, 474, 475, 522, 604.
 Uyttenboogaart, D. L., 223.

 Vampler, E. L., 411.
 Vance, A. M., 414.
 van der Laan, P. A., 17.
 Vanderwalle, R., 605.
 van Poeteren, N., 106, 269.
 van Zwaluwenburg, R. H., 90.
 Vappula, N. A., 694.
 Vasser, R. É., 148, 313.
 Vayssière, P., 358, 486.
 Veitch, R., 87.
 Vel'tishchev, P. A., 321.
 Venable, E. P., 511.
 Venturi, F., 3.
 Verma, P. M., 560.
 Vesey-Fitzgerald, D., 335.
 Vidal, J. P., 570.
 Vielwerth, V., 468.
 Viktorov, V. F., 152.
 Vinokurov, G. M., 153, 320.
 Vinson, C. G., 133.
 Vogel, R., 46.
 Volgin, V. I., 319.
 Volkonsky, M., 512, 603.
 Volkov, V. F., 307.
 Volterra, V., 161.
 Voskresenskaya, A. K., 310.
 Vukasović, P., 515.

 Wahlen, F. T., 350.
 Wahlgren, E., 160, 512.
 Wakeland, C., 412.
 Wakely, S., 295.
 Walker, G. L., 71.
 Walker, H. G., 530.
 Wallace, C. R., 184, 346.
 Wallace, G. B., 388, 492.
 Wallace, J. M., 286.
 Walters, E. V., 427.
 Walton, E. V., 287.
 Walton, R. R., 427.
 Walton, W. R., 240.
 Ward, K. M., 89, 186.
 Wardlaw, C. W., 288.
 Wardziński, K., 232.
 Wason, E. J., 57.
 Watanabe, C., 338, 614, 615, 620, 624.
 Waters, H. A., 421.
 Waterston, J. M., 85.
 Watson, E. B., 25.
 Watson, J. R., 654.
 Watzl, O., 635.
 Webb, D. van V., 387.
 Weber, H., 170.
 Webster, R. L., 178, 525.
 Weddell, J. A., 186.
 Weidner, H., 201.
 Weiland, G. S., 336.
 Wellington, J. S., 271.
 Welsch, J., 113, 507.
 Wever, A. L., 642.
 Whelan, D. E., 600.
 Whitaker, W. C., 83.
 Whitcomb, W. D., 496.
 Whitehead, T., 633.
 Whittington, F. B., 532.
 Wickens, G. M., 226.
 Wiesmann, R., 232, 280.
 Wigglesworth, V. B., 436.
 Wilcoxon, F., 272.
 Wilkinson, D. S., 37, 57, 505.
 Wilkinson, H., 666.
 Wille, J. E., 164, 385, 511.
 Williams, C. B., 608.
 Williams, F. X., 90.
 Williams, J. L., 456.
 Willis, H. R., 646.
 Wilson, C. C., 569.
 Wilson, F., 59, 262.
 Wilson, G. F., 115, 295.
 Wilson, H. F., 31, 32.
 Winning, E. von, 218.
 Wisecup, C. B., 249, 250, 287.
 Witman, E. D., 421.
 Woke, P. A., 241, 341, 524.
 Wolcott, G. N., 84, 85, 424, 434, 464.

Wolfenbarger, D. O., 644.
Woodworth, C. E., 28.
Worth, C. B., 655.
Worthley, H. N., 52, 535.
Wright, D. W., 116, 674.
Wright, E., 284.
Wünn, H., 223, 402.

Yagi, N., 442.
Yago, M., 225, 441.
Yamasaki, T., 446.
Yamazaki, M., 444.
Yanagihara, M., 363.
Yashiro, H., 444.
Yasumatsu, K., 446.
Yokoo, R., 557.
Yokoo, T., 337.
Yuasa, H., 17, 556.

Yu Hsiao, Tsai, 643.

Zaaijer, J. W., 624.
Zacher, F., 8, 219, 220, 355, 513.
Zaitzeva, A. Ya., 307.
Zakharov, L. Z., 109, 553.
Zakhvatkin, A. A., 1.
Zelensky, V., 691.
Zeller, S. M., 498.
Zenyakin, L. A., 40.
Zetterstedt, J. W., 512.
Ziegler, L. W., 653.
Zolotarev, E. Kh., 586.
Zolotarevsky, B. N., 11, 280, 481,
484, 570, 571.
Zvoruikina, N. A., 587.
Zwaluwenburg, R. H. van, 90.
Zweigbaumówna, Z., 162.

GENERAL INDEX.

In the case of scientific names, the page reference is cited only under the heading of the generic name.

When a generic name is printed in brackets, it signifies that the name is not the one adopted.

A.

Abagrotis vetusta (see *Agrotis*).
abboti, *Oiceticus* ; *Sphecodina*.
abbreviatus, *Diaprepes*.
abdominalis, *Eutrichopoda* ; *Macrocentrus*.
Abies, restrictions on importation of, into Britain, **356** ; pests of, in Germany, **48**, **401** ; *Chermes nordmannianae* on, in Switzerland, **517** ; *Acantholyda erythrocephala* not observed on, in U.S.A., **651**.
Abies alba, pests of, in Czechoslovakia, **469**.
Abies concolor, pests of, in U.S.A., **284**, **324**, **567**.
Abies grandis, *Chermes piceae* on, in U.S.A., **499**.
Abies sachalinensis, pests of, in Japan and Sakhalin, **19**, **211**, **339**, **615**.
abietina, *Pristiphora* (*Nematus*).
abietinus, *Dryocoetes*.
abietis, *Chermes* (*Adelges*) ; *Diprion* (*Neodiprion*) ; *Megastigmus*.
Ablerus clisiocampae, parasite of *Malacosoma disstria* in Minnesota, **597**.
abrupta, *Empoasca*.
abruptorius, *Exenterus*.
abscissor, *Microbracon* (*Bracon*).
abyssinialis, *Hypena*.
abyssinicus, *Anagyrus*.
Acacia, *Ochrogaster contraria* on, in Australia, **545** ; *Anomala expansa* on, in Formosa, **363** ; *Icerya purchasi* on, in Morocco, **691** ; *Aphis laburni* on, in Russia, **216** ; Coleoptera in timber of, in S. Africa, **60**.
Acacia mollissima, *Xystrocera globosa* on, in Formosa, **558**.
Acacia, White (see *Robinia*).
Acacia, Yellow (see *Caragana*).
Acaena, *Antholcus varinervis* introduced into New Zealand against, **449**.
Acalypha senensis, *Helopeltis bergrothi* on, in Sudan, **574**.

Acanthocoris sordidus, bionomics and control of, in Japan, **446**.
acanthodactyla, *Platyptilia*.
Acantholyda erythrocephala, bionomics and control of, on *Pinus* spp. in U.S.A., **279**, **651**.
Acantholyda nipponica, on pine in Japan, **339**.
Acanthoscelides (see *Bruchus*).
Acarapis woodi, attacking honeybees in Switzerland, **169**.
Acaulona peruviana, parasite of *Dysdercus ruficollis* in Peru, **164**.
Acer (see *Maple*).
Acer macrophyllum, pests of, in U.S.A., **498**, **499**.
Acer negundo, *Leptocoris trivittatus* on, in Kansas, **374**.
Acer saccharum, *Malacosoma disstria* on, in U.S.A., **377**.
Aceratoneuromyia australia, type of genus, **434**. (See *Syntomosphyrum indicum*.)
aceris, *Cryptococcus* ; *Phenacoccus* ; *Rhinocola*.
Acetylene, no reaction of *Melolontha* to, **200**.
Achaea janata, banding against, on trees in Burma, **693**.
achemon, *Pholus*.
Acherontia atropos, on potato in Britain, **332** ; on olive in Egypt, **175**.
Achroia grisella, induced response in *Nemeritis canescens* to odour of, **264**, **265** ; penetration of fluids into tracheae of, **580**.
Achrysocharella ruforum, parasite of *Diprion pini* in Danzig and E. Prussia, **105**.
Achrysophagus aegyptiacus, reared from Coccinellids in Egypt, **40** ; possibly reared from *Pseudococcus* spp. in S. Africa and Tanganyika, **40**.
Acidol, **627**.
acidusa, *Anastrepha*.
acinaciformis, *Coptotermes*.
Acolastus amyntas, on *Derris elliptica* in Porto Rico, **502**.
acontioides, *Lyncestis*.

- acraea*, *Estigmene*.
acridiorum, *Hexameris*.
Acritocera negligens, on coconut in Fiji, 212.
Acrobasis caryae, thrips predacious on, in Louisiana, 372.
Acrocercops cramerella, on cacao in Philippines, 452.
Acromyrmex, suggested measures against, in Argentina, 87.
aculeatus, *Haplothrips*.
acuminata, *Aelia*.
acuta, *Cantheconidea*.
Acyrtosiphon (see *Macrosiphum*).
Adalia bipunctata, predacious on *Anuraphis roseus* in Connecticut, 428.
Adansonia digitata (Baobab), relation of *Dysdercus* spp. to, in Africa, 222, 490, 573, 574.
Adelges (see *Chermes*).
Adelphocoris lineolatus, bionomics and control of, on lucerne in Russia, 475.
Adesmus borgmeieri, sp. n., on kapok in Brazil, 290.
 Adhesives, banding with, 28, 170, 172, 277, 354, 398, 499, 517, 611, 628, 693; spraying with, against *Tetranychus telarius*, 583; other methods of catching insects with, 125, 245, 249, 466, 633, 684.
Adia genitilis (see *Hylemyia*).
Adina cordifolia, *Xylocopa* in timber of, in India, 337.
Adonia variegata, in wheat fields in Central Asia, 453.
adonidis, *Entomoscelis*.
adonidum, *Pseudococcus*.
Adoretus versutus, on beans in Fiji, 641.
Adrama apicalis, on tea in Formosa, 339.
adreptella, *Carposina*.
adspersus, *Exenterus*.
adustus, *Spilocryptus*; *Xylion*.
advena, *Ahasverus* (*Cathartus*).
Aegeria exitiosa, measures against, on peach in U.S.A., 255, 526; bionomics of, 526.
Aegeria pictipes, measures against, on peach in Illinois, 527.
Aegeria typhiaeformis (*typhiaeformis*), parasites of, on apple, etc., in Italy, 4, 629, 630; bionomics of, 630.
aegopodii, *Cavariella*.
aegyptiaca, *Icerya*.
aegyptiacus, *Achrysopophagus*.
Aelia, type of injury to cereals by, in Germany, 352; measures against, 353.
Aelia acuminata, bionomics of, on cereals in Germany, 63, 64, 632.
Aelia klugi, ecology of, on cereals in Germany, 631.
Aelia rostrata, ecology of, on cereals in Germany, 631.
Aelia sibirica, on wheat in Central Asia, 453.
aeneus, *Chalcodermus*; *Corymbites* (*Selatosomus*); *Meligethes*.
Aeolarchis sphenotoma, parasites and control of, on *Pandanus* in Fiji, 213.
Aeolesthes induta, measures against, on tea in Formosa, 340.
aeolopa, *Lobesia*.
Aeolothrips fasciatus, predacious on insects in wheat fields in Central Asia, 453.
aequalis, *Euaresta*; *Heterobos-trychus*.
aequatus, *Rhynchites*.
aeripennis, *Corymbites* (*Ludius*).
 Aeroplanes, for distributing insecticidal dusts, 299, 514, 610, 645; power dusters compared with, 299; autogiro (*q.v.*) compared with, for spraying against forest pests, 645; *Psallus seriatus* trapped in, at high altitudes, 245; insects intercepted in quarantine in, in Hawaii, 368.
Aeropus sibiricus, in Russian Union, 146, 147, 320, 680; causing white ear in wheat, 680; relation of outbreaks of, to humidity, 146, 147.
aeruginosus, *Dermatodes*.
Aeschynomene, relation of *Nomadacris septemfasciata* to, in Tanganyika, 388.
Aesiotes leucurus, bionomics and control of, on conifers in New South Wales, 602.
Aesiotes notabilis, bionomics of, on *Araucaria cunninghami* in Queensland, 603.
aestivum, *Apion*.
aestuans, *Xylocopa*.
Aethemenes chloris, bionomics of, on rice in Sierra Leone, 271.
affinis, *Agria*; *Dibrachys*; *Pempheres*; *Phytomyza*.
 Afghanistan, *Cydia pomonella* in, 575.
 Africa, French West, locusts in, 11-14, 280, 477, 478, 480, 481, 482, 487, 570, 571, 572; pests of oil palms in, 347-349; beneficial insects in, 347, 349.
 Africa, Italian East, new Encyrtid parasites of Coccids in, 40 503;

- locusts in, **478, 570**; termites of, **174**; absence of *Stephanoderes hampei* from, **175**.
- Africa, Portuguese East, locusts in, **62, 479, 484**.
- Africa, South, *Citrus* pests in, **330**; cotton pests in, **223, 487, 488, 489, 490, 491**; pests and diseases of tobacco in, **360**; Coleoptera in timber in, **60**; locusts in, **91, 92, 93, 393**; termites in, **180, 384**; beneficial insects in, **40, 323, 394, 489, 503, 506**; ants hindering biological control of certain pests in, **323**; new Microsporidian parasites of *Cactoblastis* spp. in, **459**; beneficial insects introduced into Mauritius from, **611**.
- Africa, South-West, *Locustana pardalina* in, **394**.
- africana*, *Gryllotalpa*.
- africanus*, *Ceroplastes*; *Rhaconotus menippus*.
- agamemnon*, *Oryctes*.
- Agar, in preparations for feeding parasites, **426**; as an activator for nicotine, **645**.
- Agarista agricola*, on vines in Queensland, **365**.
- agaristae*, *Euplectrus*.
- Agelastica alni*, action of HCN on, **309**.
- Ageniaspis*, possibly parasitic on *Leucoptera* in Tanganyika, **127**.
- agilis*, *Phorocera*.
- Aglia tau*, Pentatomid predacious on, in Germany, **354**.
- Agonoderus lecontei* (*pallipes*, auct.), identity of, **595**.
- Agonum pallipes* (*limbatum*), synonymy of, **595**.
- agonus*, *Limoni* (see *Pheletes ectypus*).
- Agria affinis*, parasite of spruce sawflies in Czechoslovakia, **518**.
- agricola*, *Agarista*.
- Agricultural Institutions, value of entomological collections in, **568**.
- Agrius hyperici*, introduced into Australia against *Hypericum perforatum*, **546**.
- Agrius ruficollis*, susceptibility of blackberry varieties to, in Oklahoma, **79**.
- Agriotes*, feeding habits of larvae of, in Germany, **398**; measures against, on lupins in Russia, **683**.
- Agriotes lineatus*, possibly in Britain, **96**.
- Agriotes obscurus*, in Britain, **96**; in Siberia, **679**; bionomics of and soil conditions in relation to, **96, 679**.
- Agriotes sericeus*, on tobacco in Japan, **210**.
- Agriotes sputator*, distribution of, in Russia, **146**.
- Agromyza*, bionomics of, on barley in Japan, **209**.
- Agromyza lantanae*, attacking *Lantana* in India, **612**.
- Agromyza phaseoli*, measures against, on beans in New South Wales, **58**.
- agropyri*, *Phenacoccus*.
- Agropyrum*, pests of, in Russia, **322, 680**.
- Agropyrum repens*, *Contarinia tritici* on, in Italy and Holland, **3, 268**; pests of, in Siberia, **312, 679**.
- Agropyrum smithi*, liable to favour *Cephus cinctus*, **368**.
- Agrostis*, *Dasyneura graminis* probably on, in Britain, **635**; *Pedicularis graminum* on, in Russian Union, **151**.
- Agrostis vulgaris*, *Dasyneura graminis* on, in New York, **635**.
- Agrotis*, on beet in Britain, **674**.
- Agrotis malefida* (see *Feltia*).
- Agrotis pronuba*, suitability of, as host for *Trichogramma evanescens*, **35**.
- Agrotis segetum*, bait for, on tobacco in S. Rhodesia, **125**; on potato in Czechoslovakia, **469**; in Russian Union, **42, 146, 306, 307, 455, 589, 627, 677, 680, 682**; bionomics and physiology of, **42, 146, 455, 677, 682**; race of *Trichogramma evanescens* parasitic on, **589**; beet protecting *Scorzonera* against, **680**; experiments with fungi against, **306, 307**; tests of insecticides on, **309, 310, 627**.
- Agrotis vetusta*, measures against, on lucerne and maize in Wisconsin, **32**; fungus infesting, **32**.
- Agrotis ypsilon*, on tobacco in Fiji, **213**; on cabbage and sugar-cane in U.S.A., **250, 657**; seasonal abundance of, **250**; parasites of, **657**.
- Ahasverus advena*, measures against, in oil-palm kernels in Dahomey, **349**.
- aino*, *Diachasma* (*Opius*).
- Air-tight Storage, against cereal pests, **667**.
- Aira flexuosa*, *Dasyneura airae* on, in France, **635**.
- airae*, *Dasyneura*.

- Alabama, miscellaneous pests in, **82, 379, 599**; *Naupactus* spp. and legislation against them in, **259, 275, 378**; beneficial insects in, **82**.
- Alabama argillacea* (on cotton), in U.S.A., **243, 246, 258, 260**; in W. Indies, **271, 661**; flight of, **260**; physiological factors affecting abundance of, **258**; measures against, **271, 661**; tests of insecticides on, **243, 246**.
- alaskensis*, *Pikonema*.
- Albania, summary of plant quarantines in, **592**.
- Albasol, as an emulsifier, **141**.
- Alberta, cereal pests in, **176, 539**; Psyllids of, **175**.
- alberti*, *Eberhardia*.
- albifrons*, *Decticus*; *Spilochalcis*.
- albipes*, *Technomyrmex* (see *T. detorquens*).
- albisignata*, *Idatiella*.
- albitarsis*, *Anastatus*.
- Albizzia*, Tineid on, in Formosa, **447**.
- alboannulatus*, *Dirhicnus* (*Pteromalus*).
- albohirtum*, *Lepidoderma* (*Lepidiota*).
- albolineatus*, *Dendrolimus*.
- albomarginatus*, *Chorthippus*.
- albopunctatus*, *Crossotus*.
- Albumen, in baits for ants, **87**.
- Alcohol, for extracting insecticidal principles of plants, **135, 450**. (See Methylated Spirit.)
- Alder, pests of, in Britain, **58, 563**; *Alsophila pometaria* on, in Canada, **663**; *Linoclostis gonatias* on, in Formosa, **447**; *Cicadella viridis* on, in Germany, **398**; locust damaging, in Japan, **618**; effect of feeding *Lymantria monacha* on, **399**.
- aldrichi*, *Palpostoma*; *Sarcophaga*.
- alecto*, *Telenomus* (*Prophanurus*).
- Aleurites*, *Buzura suppressaria* on, in China, **614**; Coccid on, in Nyasaland, **126**.
- Aleurites montana*, *Achaea janata* on, in Burma, **693**; as a shade-tree for coffee against *Xylotrechus quadripes* in Indo-China, **49**; pests of, in Java, **523**.
- Aleurodes brassicae* (on cabbage), bionomics of, in Britain, **61, 265**; in Italy, **265**.
- Aleurodiosis*, **637**.
- Aleurolobus barodensis*, new parasite of, on sugar-cane in India, **385**.
- Algeria, *Cydia pomonella* in, **191-193**; *Phloeosinus* spp. on conifers in, **226**; locusts in, **480**; restrictions on importation of vines into Tunisia from, against *Phylloxera*, **11**.
- aliberti*, *Eloeidiphilos*.
- alienus*, *Lasius niger*.
- Alissonotum*, on sugar-cane in Formosa, **446**.
- Alkylphenylbenzenesulphonic Acid, addition of, to derris spray, **249**.
- Allium*, Aphid on ornamental, in Washington, **541**. (See Onion and Leek.)
- allyni*, *Eupelmus*.
- Almond, pests of, in Australia, **21, 57**; pests of, in California, **650**; *Mimastra cyanura* on, in India, **503**; *Monosteira unicastata* on, in Morocco, **359**; Coccids on, in Uzbekistan, **474**; nutritive value of kernels of, for *Ephestia kuehniella*, **64**.
- alni*, *Agelastica*.
- alopecuri*, *Dasyneura*.
- Alopecurus*, *Phytomyza nigra* on, in Japan, **208**.
- Alopecurus pratensis*, thrips on, in Finland, **160**; *Dasyneura alopecuri* on, **635**.
- Alophoropsis brasiliensis* (see *Hyalomyia*).
- alpestris*, *Dasyneura*.
- Alphus canescens*, on Anonaceae in Brazil, **566**.
- Alpine Currant (see *Ribes alpinum*).
- Alsike Clover (see *Trifolium hybridum*).
- Alsophila pometaria* (on elm, etc.), bionomics of, in Canada, **662-664**; in U.S.A., **28, 74**; measures against, **74, 663**.
- alternatus*, *Nabis*.
- Atlingia excelsa*, pests of, in Java, **227**.
- Aluminium Arsenate, **283**; spraying with, against *Leptinotarsa decemlineata*, **583, 584**.
- Aluminium Hydroxide, as a corrective for calcium arsenate, **373**.
- Aluminium Nitrate, affecting wetting power of sprays, **412**.
- Aluminium Silicate, as a dust carrier, **431**.
- Aluminium Sulphate, as an adhesive for sprays, **256, 257, 532, 533**.
- Alymus corallina* (see *Mecistomela*).
- Alyssum*, *Dociostaurus maroccanus* associated with, in Transcaucasia **321**.

- amabilis*, *Eublemma*; *Prepodes similis*.
- Amarantus*, *Hymenia recurvalis* on, in New South Wales and Fiji, **639, 641**.
- Amazon Fly (see *Metagonistylum minense*).
- ambigua*, *Myrmelachista*.
- ambiguella*, *Clysia*.
- Amblynotus longitarsis*, parasite of *Leucopis obscura* in Britain, **263**.
- Amblyteles camelinus*, parasite of *Vanessa cardui* in Transcaucasia, **587**.
- Amercedoides nitida* (see *Revena*).
- America, cactus-feeding Phycitinae of, **511**.
- America, North, Tarsoneminae of, **224**.
- americana*, Larra; *Malacosoma*; *Periplaneta*.
- americanum*, *Mezium*.
- americanus*, *Polistes crinitus*.
- Amerrhinus ynca*, on *Cocos coronata* in Brazil, **661**.
- amicropoides*, *Macrocentrus*.
- Amitermes*, in Australia, **545**.
- Ammonia, in bait for *Dacus psidii*, **131**; and oleic acid, in nicotine spray, **514**.
- Ammonium Bifluoride, in baits for grasshoppers, **134**.
- Ammonium Fluoride, in baits for grasshoppers, **134**.
- Ammonium Nitrate, in baits for *Dacus oleae*, **98**.
- Ammonium Polysulphide, against mites, **461**.
- Ammonium Sulphate, in baits for Trypetids, **98, 270**.
- amoenus*, *Anagyrus*.
- Amoora wallichii*, *Xylocopa latipes* in timber of, in India, **337**.
- Amorpha fruticosa*, rotenone in, **502**.
- Amorphoidea lata*, measures against, on cotton in Philippines, **184**.
- Amorphophallus koniac*, *Ptinus japonicus* in flour of, in Japan, **445**.
- Ampeloeca* spp., parasitised by *Apanteles congregatus* in U.S.A., **253**.
- ampelophaga*, *Theresimima* (*Procris*, *Theresia*).
- Amphimallus solstitialis*, bionomics of, damaging lawns in Holland, **269**; beet protecting *Scorzonera* against, in Russian Union, **680**.
- Amphipyra tragopoginis*, on poplar and willow in Morocco, **196**.
- Amphorophora avenae* (see *Macrosiphum*).
- Amphorophora cosmopolitana* (see *A. lactucae*).
- Amphorophora dirhodum* (see *Macrosiphum*).
- Amphorophora lactucae*, on currant and gooseberry in Britain, **333**.
- Amphorophora rubi*, on raspberry in Britain, **333**; variety of raspberry resistant to, in Washington, **280**.
- amputator, *Oncideres*.
- amyntas*, *Acolastus*; *Pleurotropis*.
- Amyosoma chilonis* (see *Microbracon chinensis*).
- Anabasine, as an insecticide, **593**.
- Anabasine Sulphate, spraying with, against Aphids, **151, 216**; and soap, **151**.
- Anabrus simplex*, outbreaks of, in U.S.A., **29, 599**.
- Anacardium occidentale*, fruit-piercing moths damaging, in Sierra Leone, **271**.
- Anacentrinus subnudus*, bionomics of, on sugar-cane, etc., in Louisiana, **248**.
- Anacridium moestum melanorhodon*, reactions of, to light, **603**.
- Anagrus armatus*, suggested introduction of, into Florida against *Saccharosydne saccharivora*, **657**.
- Anagrus atomus*, parasite of *Erythroneura pallidifrons* in Britain, **115**.
- Anagyrus*, African species of, **503**; parasite of mealybugs in Natal, **40**.
- Anagyrus abyssinicus*, sp. n., parasite of *Pseudococcus* in Eritrea, **503**.
- Anagyrus amoenus*, sp. n., parasite of *Pseudococcus* in Transvaal, **503**.
- Anagyrus bugandaensis*, sp. n., parasite of *Pseudococcus kenyae* in Uganda, **503**.
- Anagyrus coccidivorus*, introduced into Porto Rico from Hawaii against *Pseudococcus brevipes*, **502**.
- Anagyrus kivuensis*, sp. n., parasite of *Pseudococcus* in Belgian Congo, **503**.
- Anagyrus niger*, sp. n., parasite of *Pseudococcus* in Uganda, **503**.
- Anagyrus nigrescens*, sp. n., parasite of *Pseudococcus* in Transvaal, **503**.
- Anagyrus pullus*, sp. n., parasite of *Pseudococcus* in Eritrea, **503**.
- Anagyrus subproximus*, characters of group of, **504**.

- Anaitis* spp., ants preventing establishment of, against *Hypericum perforatum* in Australia, 282.
- Analeurops cuthbertsoni*, on tobacco in S. Rhodesia, 125.
- analis*, *Bruchus* (*Callosobruchus*).
- Anastax*, identity of type of, 294. (See *Tritaxys*.)
- Anaphes anomocerus*, parasite of *Psallus seriatus* in U.S.A., 381, 538.
- Anaphothrips obscurus*, bionomics of, on wheat in Sweden, 121.
- Anarsia lineatella*, on plum in Cyprus, 270.
- Anastatus* spp., parasites of *Dendrolimus spectabilis* in Japan, 211.
- Anastrepha*, in Brazil, 34; *Dirhinus giffardi* introduced into Porto Rico against, 502; in Trinidad, 24.
- Anastrepha acidusa*, bait-spray for, 256.
- Anastrepha fraterculus*, parasite of, in Brazil, 34.
- Anastrepha fraterculus* var. *mombinpraeoptans*, parasites of, in Porto Rico, 502.
- Anastrepha suspensa*, parasites of, in Porto Rico, 502; bait-spray for, 256.
- anastrephae*, *Opius*.
- Anatis quindecimpunctata*, predacious on *Anuraphis roseus* in Connecticut, 428.
- anceps*, *Hudsona*.
- Ancyliis comptana* (on strawberry), parasites of, in U.S.A., 374, 376, 377; measures against, 376.
- ancylivorus*, *Macrocentrus*.
- Andres-Maire Traps, for *Spodoptera mauritia*, 577.
- Andropogon*, relation of locusts to, in Fr. W. Africa, 571.
- Aneristus ceroplastae*, parasite of *Pulvinaria polygonata* in Formosa, 558.
- Anethum graveolens*, new Aphid on, in California, 590; celery virus transmitted to, 590.
- Anetia nigripes* (see *Lydella*).
- Angitia*, parasite of *Cydia nigricana* in Britain, 38, 39; parasite of *C. molesta* in Victoria, 640.
- Angitia cerophaga* (parasite of *Plutella maculipennis*), in Britain, 262; introduced into New Zealand, 262.
- Angitia fenestralis* (parasite of *Plutella maculipennis*), in Britain, 262; introduced into New Zealand and New South Wales, 262, 545; reared from *Pissodes notatus* in Finland, 8.
- Angitia molesta* (parasite of *Cydia molesta*), in U.S.A., 377, 544; introduced into Australia, 544.
- Angitia rufipes*, 38.
- angusticeps*, *Thrips*.
- angusticollis*, *Psylliodes*; *Zootermopsis*.
- angustifrons*, *Cheiloneurus*.
- Aniline, in oil emulsions against vine moth pupae, 103.
- Anisodactylus binotatus*, measures against, on strawberry in Germany, 457.
- Anisoplia austriaca*, on wheat in Czechoslovakia, 468; fungus infesting, in Russia, 306; experiments with fungi against, 307.
- anitus*, *Microphanurus*.
- annexa*, *Feltia*.
- annulata*, *Campsomeris*.
- annulipes*, *Caliroa* (*Eriocampoides*); *Chelonus*.
- anobiidivorus*, *Heterospilus*.
- Anobiids, frass and debris due to boring by, 568.
- Anobium punctatum* (*striatum*), in building timber in U.S.A. and Russia, 78, 322; suitable for testing wood preservatives, 204.
- Anogeissus acuminata*, *Heterobostrychus aequalis* in timber of, in Burma, 693.
- Anomala*, *Lacon murinus* experimentally feeding on, 398.
- Anomala cuprea*, bionomics of, in Japan, 17, 338; morphology of, 17.
- Anomala dubia* var. *frischi*, damaging lawns, etc., in Holland, 269.
- Anomala expansa*, bionomics of, on sugar-cane, etc., in Formosa, 363, 446.
- Anomala horticola*, bionomics of, damaging lawns, etc., in Holland, 269.
- Anomala orientalis*, on sugar-cane and pineapple in Hawaii, 366, 367; parasites of, 367.
- Anomala rufocuprea*, on tobacco and soybeans in Japan, 210, 338; effect of light on, 338.
- Anomala viridis*, on *Altingia excelsa* in Java, 227.
- Anomis flava* (see *Cosmophila*).
- Anomis luridula* (*texana*), measures against, on cotton in Peru, 164.
- anomocerus*, *Anaphes*.

- Anona*, *Coccus longulus* on, in Egypt, 509.
- Anona squamosa*, pests of, in Brazil, 566, 567.
- anonella*, *Cerconota*.
- anonicola*, *Codionhispa*; *Meroprion*.
- Anophia leucomelas* (on sweet potato), in Japan, 444, 445, 620; in Loochoo Islands, 444; bionomics of, 444, 445; measures against, 445.
- antancarus*, *Enicospilus*.
- antennata*, *Graptolitha*.
- antennatum*, *Callidium*.
- Antestia*, measures against, on coffee in Kenya, 667; vector of *Nematospora*, 389.
- Antestia lineaticollis*, on coffee in Tanganyika, 127.
- Antheraea pernyi* (Chinese Oak Silkworm), experiments on possibility of establishment of, in Russian Union, 403, 586.
- Antholcus varinervis*, introduced into New Zealand against *Acaena*, 449.
- Anthomyia*, species of *Hylemyia* referred to, 113.
- Anthomyiids, nomenclature of injurious, 113, 114.
- Anthonomus grandis* (Cotton Boll Weevil), legislation against introduction of, into Barbados, 661; in Haiti, 661; in U.S.A., 244, 246, 247, 380, 381; susceptibility of varieties of cotton to, 247, 381; experiments with insecticides against, 244, 245, 246, 247.
- Anthonomus piri*, bionomics of, in Germany, 632.
- Anthonomus pomorum* (Apple Blossom Weevil), in Britain, 333; in Czechoslovakia, 469; in Germany, 298; on pear in Manchuria and China, 340, 450; hibernating in pine bark, 298; measures against, 298, 450.
- Anthonomus pyri* (see *A. piri*).
- Anthonomus rectirostris*, measures against, on cherries in Germany, 156.
- Anthonomus rubi*, measures against, on strawberry in Germany, 155.
- Anthonomus signatus*, measures against, on strawberry in U.S.A., 380.
- Anthonomus spilotus*, 632.
- Anthonomus varians*, bionomics of, on pine in Rumania, 355.
- Anthonomus vestitus*, bionomics of, on cotton and *Hibiscus* in Peru, 164.
- Anthores leuconotus*, on coffee in Nyasaland, 126.
- Anthracene Oil Emulsion, 360. (See Tar Distillates.)
- Anthrenus*, characters and habits of species of, in Germany, 47.
- Anthrenus fuscus*, 47.
- Anthrenus museorum*, 47.
- Anthrenus pimpinellae*, 47.
- Anthrenus scrophulariae*, bionomics of, damaging woollen goods in Germany, 47.
- Anthrenus verbasci* (varians), bionomics of, in Germany and Victoria, 7, 47, 187, 354; measures against, 188.
- Anthrenus vorax*, infesting house insulation in U.S.A., 640.
- Anthriscus cerefolium*, celery virus transmitted to, 590.
- Anthrocephalus pomonellae* (see *Stomatoceras*).
- Anticarsia gemmatilis*, measures against, on soy beans in U.S.A., 258, 371, 373, 422; bionomics of, 371.
- Antigua, attempted introduction of Coccinellid against *Aspidiotus destructor* on coconut in, 25; *Diatraea saccharalis* and its biological control on sugar-cane in, 25, 183, 658, 659, 660; *Lixophaga diatraeae* introduced into St. Lucia from, 182.
- Antimony Potassium Tartrate (see Tartar Emetic).
- antipodialis*, *Chromocryptus*.
- antiqua*, *Hylemyia* (*Delia*); *Orgyia*.
- antonii*, *Helopeltis*.
- Ants, list of Formosan species of, 446; associated with Aphids, 44, 276, 323, 363, 376; associated with Coccids, 323, 335, 363, 611, 665; other Arthropods in nests of, 288; destroying other insects, 82, 100, 231, 239, 282, 323, 335, 363, 364, 489, 564, 611, 642; natural enemies of, 129, 288; experimentally infested with *Beauveria bassiana*, 688; measures against, 25, 44, 87, 287, 288, 323, 435, 541, 567, 611, 665; differences in sensitivity of species of, to arsenical baits, 112.
- Ants, Carpenter (see *Camponotus*).
- Ants, Leaf-cutting (see *Acromyrmex* and *Atta*).
- Ants, Red Forest (see *Formica rufa*).

- Anuraphis padi* (*helichrysi*), sprays against, on plum in Britain, **332, 333**.
- Anuraphis persicae-niger*, measures against, on peach in Tasmania, **20**.
- Anuraphis roseus* (on apple), in Britain, **333**; in U.S.A., **428, 535, 536**; bionomics and biological control of, **428**; other measures against, **333, 428, 535, 536**; characters distinguishing *Aphis pomi* and, **428**.
- Anuraphis schwartzi*, on peach in Germany, **687**.
- Anuraphis tulipae*, not transmitting breaking disease of tulips in Oregon, **369**.
- Aonidiella aurantii* (on *Citrus*), in Argentina, **23**; in Australia, **292**; in California, **342, 343, 460, 649**; natural enemies of, in Cyprus, **270**; in Egypt, **509**; in India, **503**; in Japan, **207**; in New Zealand, **523, 524**; in S. Rhodesia, **14**; bionomics of, **207, 524**; measures against, **15, 23, 292, 460, 509, 524**; toxicity of dinitro-orthocyclohexylphenol to, **649**; resistance of strains of, to HCN and other fumigants, **342, 343**.
- Aonidiella citrina*, bionomics of, on *Citrus* in Transcaucasia, **148, 149**.
- Aonidiella orientalis*, measures against, on lac host-trees in India, **128**.
- Aonidiella perniciosa* (see *Aspidiotus*).
- aonidium*, auct., *Chrysomphalus* (see *C. ficus*).
- Apamea secalis* (see *Trachea*).
- Apamea testacea* (see *Luperina*).
- Apanteles*, parasite of *Phthorimaea operculella* in Brazil, **289**; parasite of *Pissodes validirostris* in Finland, **8**; parasite of *Protoparce sexta* in Florida, **251**; probably parasitic on *Malacosoma neustria* in Holland, **205**; parasite of *Pyrausta phoenicealis* in Japan, **210**; parasite of *P. aurata meridionalis* in Morocco, **193**; emendations to key to, **505**.
- Apanteles bedelliae*, parasite of *Bedellia somulentella* in Kansas, **375**.
- Apanteles carposinae*, sp. n., parasite of *Carposina adreptella* in New Zealand, **37**.
- Apanteles coleophorae*, sp. n., parasite of *Coleophora fuscadinella* in Britain, **58**.
- Apanteles compressiventris*, hosts and distribution of, **505**.
- Apanteles congregatus* (parasite of Sphingids), in U.S.A., **178, 253, 655**; bionomics and distribution of, **253, 254**.
- Apanteles diatraeae*, introduced into U.S.A. against *Diatraea saccharalis*, **656**.
- Apanteles difficilis*, parasite of *Erannis* in Crete, **172**.
- Apanteles dignus*, sp. n., parasite of *Phthorimaea* spp. in California and Virgin Islands, **133**.
- Apanteles dioryctriae*, sp. n., parasite of *Dioryctria peyerimhoffi* in Morocco, **58**.
- Apanteles flavipes*, parasite of *Diatraea sticticraspis* in Mysore, **291**.
- Apanteles insignis*, sp. n., parasite of *Platyptilia acanthodactyla* in California, **133**.
- Apanteles langei*, sp. n., parasite of *Pyrausta inequalis* in California, **133**.
- Apanteles liparidis*, bionomics of, in Japan, **91, 209, 211, 442**.
- Apanteles machaeralis*, parasite of *Hapalia machaeralis* in Burma, **693**.
- Apanteles phutellae*, hosts and distribution of, **505**.
- Apanteles scutellaris*, establishment of, against *Phthorimaea operculella* in Hawaii, **367**.
- Apanteles sicarius*, parasite of *Plutella maculipennis* in Britain, **262**.
- Apanteles solitarius*, establishment of, against *Stilpnotia salicis* in U.S.A., **499**.
- Apanteles spurius*, parasite of *Vanessa cardui* in Transcaucasia, **587**.
- Apanteles tachardiae*, unsuitable for use against *Holcocera pulvereana* in India, **129**.
- Apate monacha*, on coconut in Jamaica, **239**.
- apatelae*, *Arthrolytus* (see *Dibrachys cavus*).
- Aphaereta*, key to European species of, **604**.
- Aphaereta difficilis*, sp. n., parasite of *Hylemyia* spp. in Morocco, **604**.
- Aphalara calthae*, on potato in Germany, **636**.
- Aphanistes ruficornis*, parasite of *Sphinx pinastri* in Poland, **677**.
- Aphelinus diaspidis* (see *Aphytis*).

- Aphelinus mali* (parasite of *Eriosoma lanigerum*), bionomics of, 10, 549, 589; utilisation of, 20, 117, 127, 162, 271, 548-550, 588; factors affecting efficiency of, in New Zealand, 548-550.
- Aphelinus mytilaspidis* (see *Aphytis*).
- Aphidencyrus aphidivorus*, parasite of *Leucopis obscura* in Britain, 263.
- aphidis*, *Pachyneuron*.
- Aphidius*, *Coelonotus* considered a synonym of, 615.
- Aphidius japonicus* (see *Coelonotus*).
- Aphidius rosae*, parasite of *Macrosiphum onobrychis* in Utah, 31.
- Aphidius salignae*, sp. n., parasite of *Lachnus salignus* in Japan, 615.
- aphidivorus*, *Aphidencyrus*.
- Aphids, and plant diseases, 83, 84, 87, 125, 126, 157, 158, 213, 226, 236, 267, 274, 280, 289, 301, 302, 303, 333, 365, 369, 370, 448, 472, 493, 590, 591, 633, 634, 652, 658, 667, 671, 672, 686, 687, 688; ants associated with, 44, 276, 323, 363, 376; natural enemies of, 20, 82, 117, 127, 162, 215, 226, 228, 262, 263, 271, 305, 334, 371, 382, 428, 578, 588, 615, 628, 629, 674, 687; technique for rearing *Hippodamia* on, 81; factors affecting wing development in, 323; trapped by leaves of tomato and bean, 113, 142; tests of insecticides on, 236, 259, 272, 332, 458; of California, 261; of Canada, 104; of Central Europe, 392; of Italy, 224, 512; of Lapland, 512; of Sweden, 160; classification and new species of, 100, 104, 160, 224, 261, 336, 339, 392, 552, 590, 596; check-list of genera of, 392.
- Aphis*, transmitting disease of *Passiflora* in Australia, 448; key to species of, on *Ribes*, 597.
- Aphis apigraveolens*, sp. n., transmitting disease of celery in California, 590.
- Aphis apii*, transmitting disease of celery in California, 590.
- Aphis avenae* (see *Macrosiphum*).
- Aphis brassicae* (see *Brevicoryne*).
- Aphis chloris*, bionomics of, on *Hypericum perforatum* in Britain, 59.
- Aphis coprosmae*, in New Zealand, 336.
- **Aphis fabae*, in Britain, 673, 674; in Germany, 334, 686, 688; bionomics of, 674, 686; measures against, on beans and beet, 334, 674; relation of, to virus diseases of plants, 686, 688; considered distinct from *A. rumicis*, 674.
- Aphis ferruginea-striata*, sp. n., vector of food-plants and relation to celery virus of, in California, 590, 591.
- Aphis forbesi* (see *Cerosipha*).
- †*Aphis frangulae*, bionomics and relation to virus diseases of plants of, in Germany, 633, 634, 686, 688; on cotton in Russia, 215, 216.
- †*Aphis gossypii*, in Czechoslovakia, 471; in India, 228; in Manchuria, 361; in Peru, 164; in U.S.A., 243, 245, 256, 590; vector of virus disease of celery, 590; on *Citrus*, 256; on cotton, 164, 228, 243, 245; hairiness of cotton leaves in relation to, 243; *Leucopis griseola* predacious on, 228; dust of derris with chloropicrin ineffective against, 471; effect of calcium arsenate dusts on infestation by, 164, 243.
- Aphis grossulariae*, on currant and gooseberry in Britain, 333, 596.
- Aphis heraclella*, on celery in California, 590.
- Aphis laburni* (*leguminosae*), transmitting rosette disease of ground-nuts in Nyasaland, 126; bionomics of, on cotton, etc., in Russia, 215, 216; measures against, 216.
- Aphis maidis*, in Fiji, 641; in Florida, 658; in Italy, 472; in Philippines, 667; in Queensland, 87; on maize, 88, 641; transmitting sugar-cane mosaic, 87, 658, 667; possible vector of virus disease of sugar sorghum, 472; measures against, 88.
- **Aphis medicaginis*, on certain lupins in Russia, 151; measures against, 151.
- Aphis middletonii*, vector of disease of celery in California, 590.
- Aphis neomexicanus*, on *Ribes* in U.S.A., 596.

* In view of the divergent opinions on the identity of the Aphids of this group, no attempt is here made to show the synonymy.

† These references refer to the same species: some authors consider *gossypii* a synonym of *frangulae*.

- **Aphis papaveris*, on beet in Czechoslovakia, 468.
- Aphis pawneepae*, ant associated with, on *Cercis canadensis* in Kansas, 376.
- Aphis pomi* (on apple), in Britain, 332, 333; resistance of, to abnormal cold in France, 622; in U.S.A., 428, 534; measures against, 333, 534; studies on ovicides against, 236, 332; characters distinguishing *Anuraphis roseus* and, 428.
- Aphis rhamni*, in Britain, 563; in Germany, 157, 633, 686, 688; in Holland, 563, 578; in U.S.A., 563; relation of, to virus diseases of plants, 157, 563, 578, 633, 686, 688; *Rhamnus* primary food-plant of, 578, 686.
- Aphis ribiensis*, on *Ribes* in Utah, 596.
- Aphis ribi-gillettei*, sp. n., on currant and gooseberry in Utah, 596.
- Aphis ribis*, on *Ribes gracile* in Missouri, 597.
- **Aphis rumicis*, 448; in Britain, 673; relation of, to virus diseases of plants in Germany and U.S.A., 267, 370, 590, 652; test of greenhouse fumigant on, 272; identity of, 673.
- Aphis sacchari* (on sugar-cane), in Jamaica, 238; in Queensland, 186; relation of, to diseases of sugar-cane, 186.
- Aphis sanborni*, on gooseberry in U.S.A., 596.
- Aphis spiraeicola*, on *Citrus* in U.S.A., 256, 259, 460, 461; insecticides against, 259, 460, 461.
- Aphis tavaresi* (on *Citrus*), measures against, in New Zealand, 277; in S. Rhodesia, 15.
- Aphis varians*, on *Ribes* in U.S.A., 596.
- Aphis, Barley (see *Brachycolus noxius*).
- Aphis, Black Bean (see *Aphis fabae*).
- Aphis, Citrus (see *Aphis spiraeicola*).
- Aphis, Cotton (see *Aphis gossypii*).
- Aphis, Pea (see *Macrosiphum onobrychidis*).
- Aphis, Peach (see *Myzus persicae*).
- Aphis, Potato (see *Macrosiphum solanifolii*).
- Aphis, Rosy Apple (see *Anuraphis roseus*).
- Aphis, Strawberry Root (see *Cerosiphia forbesi*).
- Aphis, Woolly Apple (see *Eriosoma lanigerum*).
- Aphis, Yellow Sugar-cane (see *Sipha flava*).
- Aphomia gularis* (in stored products), in China, 451; in Germany, 355, 520, 521; imported into Germany from Manchuria, 520; in Japan, 360; bionomics of, 520, 521; measures against, 451, 521.
- aphyopterus*, *Microcryptus brachypterus*.
- Aphytis chrysomphali* (parasite of Coccids), in Argentina, 24; in Cyprus, 270.
- Aphytis diaspidis*, parasite of Coccids in Brazil, 87.
- Aphytis mytilaspidis* (parasite of Coccids), in Argentina, 24; in Transcaucasia, 149.
- Aphytis proclia*, parasite of *Aspidiotus perniciosus* in Argentina, 24.
- apicalis*, *Adrama*.
- apicipennis*, *Exora*.
- apigraveolens*, *Aphis*.
- apii*, *Aphis*.
- Apiomerus crassipes*, predacious on *Horistonotus uhleri* in S. Carolina, 500.
- Apiomyia bergenstammi*, in Corfu, 5; bionomics and control of, on pear in Italy, 5.
- Apion*, studies of migrations of, in Russia, 681.
- Apion aestivum* (on clover), bionomics of, in Russia, 682; distribution of, in Sweden, 117; susceptibility of varieties of clover to, 118; fungi infesting, and their utilisation, 118.
- Apion apricans* (on clover), in Czechoslovakia, 470; bionomics of, in Russia, 568, 681, 682; distribution of, in Sweden, 117; susceptibility of varieties of clover to, 118; fungi infesting, and their utilisation, 118; net for collecting adults of, 470.
- Apion carduorum*, on artichokes in France, 357.
- Apion carduorum* var. *galactitis*, bionomics and control of, on artichokes in France, 357.
- Apion flavipes*, bionomics of, in Russia, 568, 682.

* In view of the divergent opinions on the identity of the Aphids of this group, no attempt is here made to show the synonymy.

- Apion seniculum*, bionomics and control of, on *Trifolium hybridum* in Latvia, 47.
- Apion ugandum*, on *Voandzeia* in Nyasaland, 126.
- Aplastomorpha calandrae*, parasite of *Pemphres affinis* in India, 506.
- Apleurotropis lalori*, sp. n., parasite of *Promecotheca* in New Guinea Territory, 294.
- Aporia crataegi* (in orchards), in Czechoslovakia, 145, 468; proposed measures against, in Poland, 163; parasite of, 145.
- Appelia* (see *Anuraphis*).
- Apple, *Cydia pomonella* on, in Afghanistan, 575; *C. pomonella* on, in Algeria, 192; pests of, in Argentina, 24, 188; pests of, in Australia, 20, 57, 89, 130, 159, 186, 279, 292, 345, 346, 390; pests of, in Baluchistan, 50-52, 577; pests of, in Britain, 236, 333, 396, 676; spray programme for, in Britain, 396; pests of, in Canada, 66, 382, 542, 662, 663, 664; *Illiberis pruni* on, in China, 450, 663; *Eriosoma lanigerum* on, in Cyprus, 271; pests of, in Czechoslovakia, 468, 469; pests of, in Denmark, 117; *Melolontha hippocastani* on, in Finland, 267; pests of, in France, 168, 390, 357, 622, 690; pests of, in Germany, 114, 155, 156, 298, 301, 398, 513; pests of, in Holland, 301, 578; *Aspidiotus perniciosus* on, in Hungary, 690; pests of, in India, 503, 577; pests of, in Italy, 4, 104, 197, 629, 630; pests of, in Japan, 207, 209, 361, 556, 557, 616; pests of, in Jugoslavia, 10, 690; pests of, in Manchuria, 340; pests of, in Morocco, 283, 359; pests of, in New Zealand, 159, 548, 550; *E. lanigerum* on, in Palestine, 127; pests of, in Poland, 162, 163, 675, 694; *E. lanigerum* on, in S. Rhodesia, 125; *A. perniciosus* on, in Rumania, 690; pests of, in Russian Union, 303, 305, 316, 455, 474, 552, 587, 588, 589, 610, 623, 681, 683; pests of, in Switzerland, 232, 438; pests of, in U.S.A., 31, 33, 52, 77, 133, 134, 141, 166, 178, 272, 273, 343, 382, 384, 419, 420, 428, 429, 430, 432, 525, 532, 533, 534, 535, 536, 542, 642, 643, 648, 652; list of Cecidomyiids attacking, 557; susceptibility of varieties of, to *E. lanigerum*, 100, 141; effect of feeding *Lymantria* spp. on, 399, 405, 406; insecticides causing injury to, 6, 134, 309, 420, 425, 430, 534, 535, 536, 680.
- Apple (Fruit), restrictions on importation of, into Britain, 356; *Rhagoletis pomonella* intercepted in, in Russian Union, 439; effect of methyl bromide against pests in, 541, 542; problems of spray residues on, 133, 139, 168, 188-190, 192, 193, 273, 525, 539, 642, 648.
- Apple Aphis, Rosy (see *Anuraphis roseus*).
- Apple Aphis, Woolly (see *Eriosoma lanigerum*).
- Apple Blossom Midge (see *Contarinia mali*).
- Apple Blossom Weevil (see *Anthonomus pomorum*).
- Apple Curculio (see *Tachypterellus quadrigibbus*).
- Apple Leaf Jassid (see *Typhlocyba froggatti*).
- Apple Moth (see *Hyponomeuta padellus malinellus*).
- Apple Moth, Light-brown (see *Tortrix postvittana*).
- Apple Worm, Lesser (see *Enarmonia prunivora*).
- Apple-tree Borer, Flat-headed (see *Chrysobothris femorata*).
- apricans, *Apion*.
- apricarius, *Chorthippus* (*Stenobothrus*).
- Apricot, pests of, in Baluchistan, 51, 577; *Myzus persicae* on, in Britain, 236; *Saissetia oleae* on, in California, 649; *M. persicae* on, in Germany, 157, 687; *Eurytoma samsonovi* on, in India, 503; *Cydia pomonella* on, in Italy, 4; Coccids on, in Uzbekistan, 474, 552; not attacked by *Aegeria typhiaeformis*, 630; penetration of leaves of, by insecticides, 309.
- Apricot (Fruit), *Ceratitis capitata* intercepted in, in Russian Union, 439; (dried), seldom attacked by *Carpophilus hemipterus*, 201.
- Apriona cinerea*, on apple in India, 503.
- Aptinothrips rufus*, on wheat and grasses in Sweden, 121.
- aquifolii*, *Phytomyza* (see *P. ilicis*).
- Arabia, locusts in, 480, 481, 482.
- Arabis*, *Dasyneura alpestris* causing leaf galls on, 673.
- arabis*, *Dasyneura* (see *D. alpestris*).

- Arachis hypogaea* (see Ground-nuts).
Aradus cinnamomeus, trapped by leaves of tomato in Germany, 113.
Araecerus fasciculatus, in stored cacao in Ceylon, 638.
Araucaria cunninghami, *Aesiotes notabilis* on, in Queensland, 603.
arboreus, *Microceroterme*s.
archangelskyae, *Leucodiaspis*.
Arctia caja, on tobacco in Japan, 210.
Arctia caja phaeosoma, on cereals and peas in Japan, 556.
Arctia villica, parasitised by *Apanteles compressiventris*, 505.
Arctium lappa, Acridid damaging, in Japan, 618.
Arctonis chrysorrhoea, parasite of, in Japan, 338.
Arcyptera fusca, in Jugoslavia, 480.
Arcyptera microptera (see *Pararcyptera*).
Areginal, fumigation of flour mills with, against *Ephestia kuehniella*, 400.
Aresket, as a wetter and spreader for sprays, 71, 72.
Argentina, *Citrus* pests in, 23, 238; orchard pests in, 24, 188, 237, 601, 602; miscellaneous pests in, 87, 238, 413, 623; Coccids in, 23, 24, 87, 238; locusts and grasshoppers in, 213, 214, 476, 543; beneficial insects and biological control in, 23, 24, 214, 237, 238, 601, 602; amendments to plant quarantines in, 344; insects introduced into other countries from, against *Opuntia*, 345, 459.
argentinus, *Ephialtes* (*Calliephialtes*).
argillacea, Alabama.
Argyresthia ephippella, measures against, on cherry in Austria, 232.
Argyria sticticraspis (see *Diatraea*).
Argyroploce, new parasite of, on *Inocarpus* in Fiji, 19.
Argyroploce illepidi, parasites of, on beans in Fiji, 213, 641.
Argyroploce leucotreta, measures against, on orange in S. Africa, 330.
Argyrotaenia citrana (see *Eulia*).
aridula, *Chaetocnema*.
Ariri Palm (see *Cocos vagans*).
aristella, *Lonchaea*.
Aristotelia, on *Iris* in Japan, 441.
Arizona, *Rhynchota* on cotton in, 381, 416, 538; miscellaneous pests in, 142, 377, 378; *Paratrioza cockerelli* in, 409, 422; parasites of *Psallus seriatus* in, 538.
Arkansas, *Diceroprocta vitripennis* on cotton in, 165; *Listroderes obliquus* in, 327; miscellaneous pests in, 178, 537, 599; parasite of *Psallus seriatus* in, 538.
Arma custos (see *Auriga*).
armatus, *Anagrus*; *Phloeosinus armigera*, *Heliothis*.
Armillaria mellea, 504, 562.
armoraciae, *Phaedon*; *Phyllotreta*.
Armyworm, Nutgrass (see *Laphygma exempta*).
Armyworm, Southern (see *Xylomyges eridania*).
Arrhenodes, type and synonymy of, 595.
Arrhenodes minutus (*septentrionis*), synonymy of, 595.
arrogans, *Trigonophymus*.
Arrowroot, *Calpodes ethlius* on, in St. Vincent, 271.
Arsenic, in baits, 32, 67, 112, 134, 250, 291, 537; reactions of wireworms to, 28, 29; in dust against *Laphygma exempta*, 368; uses of, against termites, 181, 465; danger to bees and birds of insecticides containing, 4, 101, 156, 159; problem of residues of, on fruit, 139, 168, 191, 192, 193, 273, 293, 331, 432, 495, 539, 642.
Arsenic Pentoxide, in bait for locusts, 602; use of, against *Rhizopertha* in pith helmets, 612.
arteagai, *Opsophyto*.
Artemisia, *Pyrausta nubilalis* on, in Britain, 116, 295; Geometrid on, in Sicily, 630.
Arthrochlamys spilota, bionomics of, on rhododendron in Japan, 212.
Arthrolytus apatelae (see *Dibrachys cavus*).
Artichoke (*Cynara*). *Phytomyza atricornis* on, in California, 600; weevils on, in France and Italy, 357, 473; liable to attack by *Dectes spinosus*, 546.
Artona catoxantha, on coconut in Philippines, 451.
Arundinaria, new Coccid on, in Formosa, 103.
arundinariae, *Kuwanaspis*.
arundinis, *Hyalopterus*.
Asanilic Acid, toxicity of, to grasshoppers, 134.
Ascia rapae (see *Pieris*).
Ascogaster canifrons, parasite of *Cydia pomonella* in Central Asia, 588.

- Ascogaster carpocapsae* (parasite of *Cydia molesta*), introduced into Australia from U.S.A., 544 ; utilisation of, against *C. nigricana* in Canada, 39.
- Ascogaster quadridentata*, parasite of *Cydia nigricana* in Britain, 38 ; parasite of *C. pomonella* in Italy, 4 ; not experimentally parasitising *Enarmonia caryana* in Transcaucasia, 377 ; bionomics of, 38.
- Aserica formosae*, soil characters in relation to, in sugar-cane fields in Formosa, 206.
- Aserica japonica* (on soy beans), effect of light on adults of, in Japan, 338.
- Ash (*Fraxinus*), cankerworms on, in N. America, 74, 663 ; *Prociophilus oriens* migrating to *Abies* from, in Japan, 211.
- Asia, Central, *Ulobaris loricata* on beet in, 152 ; cotton pests in, 147, 609, 625 ; pests of forest and shade trees in, 153, 474 ; Aphids on leguminous plants in, 552 ; orchard pests in, 315, 474, 552, 587, 610, 623 ; pests of rubber-producing plants in, 44 ; wheat pests in, 453 ; Coccids in, 315, 336, 474, 552 ; beneficial insects in, 453, 588, 589, 609, 626.
- asiatica*, *Chionaspis*.
- asozanus*, *Gelis* (*Pezomachus*).
- asparagi*, *Crioceris*.
- Asparagus, *Crioceris asparagi* on, in Utah and Italy, 426, 471.
- Asparagus Beetle (see *Crioceris asparagi*).
- Aspens (see *Populus tremula* and *P. tremuloides*).
- Aspergillus*, *Necrobia rufipes* feeding on, 584.
- asphaltinus*, *Otiorrhynchus*.
- Asphondylia*, on wild serradella in Portugal, 495 ; food-plant range of species of, 673.
- Aspidiotiphagus citrinus*, parasite of *Aonidiella citrina* in Transcaucasia, 149.
- Aspidiotiphagus lounsburyi*, parasite of *Aspidiotus hederae* in Nyasaland, 126.
- Aspidiotus chinensis*, bionomics of, on imported orchids in Japan, 617.
- Aspidiotus destructor* (on coconut), in Fiji, 212 ; in Mauritius, 611 ; in W. Indies, 25, 502 ; Coccinellids and biological control of, 25, 212, 502, 611 ; ants fostering, 611.
- Aspidiotus hederae*, parasite of, on *Aleurites* in Nyasaland, 126.
- Aspidiotus jourdani*, sp. n., in Morocco, 392.
- Aspidiotus juglans-regiae*, measures against, on walnut in California, 649.
- Aspidiotus lataniae*, measures against, on vines in Brazil, 34.
- Aspidiotus orientalis* (see *Aonidiella*).
- Aspidiotus ostreaeformis*, on fruit trees and bush-fruits in Czechoslovakia, 468.
- Aspidiotus perniciosus* (on fruit trees), in Austria, 690 ; on currant in Germany, 467 ; in Hungary, 690 ; legislative measures against, in Yugoslavia, 690 ; in Manchuria, 340 ; in Punjab, 503 ; in Rumania, 690 ; in Russian Union, 303, 315, 681 ; in U.S.A., 343, 534 ; bionomics of, 315, 316 ; Coccinellids predacious on, and their utilisation, 303, 304, 316 ; other measures against, 467, 534, 681, 690 ; emulsions dissolving wax coating of, 467 ; resistance of strains of, to lime-sulphur, 343.
- Aspidiotus personatus* (see *Chrysomphalus*).
- Aspidiotus prunorum*, on fruit trees in Uzbekistan, 474.
- Aspidiotus slavonicus*, on poplar and willow in Uzbekistan, 474.
- assimilis*, *Gryllulus* (*Gryllus*).
- assmuthi*, *Termes* (*Odontotermes*).
- assulta*, *Heliothis* (*Chloridea*).
- Asterolecanium bambusae*, *Cladosporium* infesting, on bamboo in Porto Rico, 501.
- Asterolecanium miliaris*, on bamboo in Porto Rico, 501.
- Asterolecanium palmae*, on coconut in Jamaica, 239.
- Asterolecanium variolosum* (on oak), in Australia, 21, 546 ; in New Zealand, 546 ; utilisation of *Habrolepis dalmanni* against, 21, 546 ; tar distillate against, 21.
- Astragalus aureus*, relation of *Doclostaurus maroccanus* to, in Transcaucasia, 321.
- Astragalus sinicus*, identity of *Phytomyza* on, in Japan, 444.
- asynamorus*, *Tachycines*.
- atalantae*, *Theronia*.
- Ataxia hubbardi*, unsuitable for use against *Xanthium pungens* in Australia, 546.
- ater*, *Hylastes*.

- Athalia rosae* (*colibri*, *spinarum*) (on crucifers), in Denmark, 117; in Germany, 110; in Russian Union, 313, 439; tests of potential insecticides against, 313.
- athasaria*, *Ellopia*.
- Athesapenta cyperi* (attacking nut-grass), introduced into Australia and Fiji from Hawaii, 367, 546.
- Athous obscurus* (*haemorrhoidalis*), in Britain, 96.
- atlanticus*, *Smerinthus ocellatus*.
- Atomaria linearis* (on beet and mangel), in Britain, 332, 674; in Denmark, 117.
- atomus*, *Anagrus*.
- atra*, *Phyllotreta*.
- Atrides plebeja*, parasitised by *Apanteles congregatus* in U.S.A., 253.
- atricapillus*, *Chrysocoris* (see *C. javanus*).
- atricornis*, *Phytomyza*.
- Atriplex*, beet pests on: in New South Wales, 639; in Poland, 351, 352; in Russian Union, 152, 322, 677.
- atropos*, *Acherontia*.
- Atta*, in Argentina, 87; in Brazil, 271; methods for studying structure of nests of, 271, 567; measures against, 87, 287, 567.
- Atta cephalotes*, in Dutch Guiana, 567.
- Atta sexdens*, in Dutch Guiana, 567.
- Atta texana*, importance of, in Texas, 287.
- Attagenus japonicus*, in stored tobacco in Japan, 210.
- Attagenus pellio*, habits of, in Germany, 7, 224, 513; measures against, 513.
- Attagenus piceus*, infesting house insulation in U.S.A., 640.
- attenuata*, *Estola*; *Psylliodes*.
- aucubae*, *Macrosiphum* (see *M. solani*).
- Aulacaspis pentagona*, food-plants and biological control of, in Brazil, 34, 86, 87; on papaya in Porto Rico, 435; oil emulsions against, 34, 435.
- Aulacophora* (see *Ceratia*).
- Aulacorthum* (see *Macrosiphum*).
- aurantiaria*, *Erannis*.
- aurantii*, *Aonidiella* (*Chrysomphalus*); *Prospaltella*; *Pulvinaria*; *Scirtothrips*.
- aurata*, *Pyrausta*.
- auratus*, *Carabus*; *Dirhinus*; *Rhynchites*.
- aurea*, *Leskia*.
- auricularia*, *Forficula*.
- Auriga custos*, predacious on *Leptinotarsa decemlineata* in France, 107.
- auripennis*, *Xylocopa*.
- auronitens*, *Entedon*.
- aurulenta*, *Buprestis*.
- austauti*, *Smerinthus populi*.
- Austracris guttulosa*, in Queensland, 602.
- australe*, *Dolichocolon*.
- Australia, forest pests in, 262, 545, 546; *Lyctus* in timber in, 509; miscellaneous pests in, 21, 544, 545; *Ctenolepisma longicaudata* in, 510; grasshoppers in, 56, 476, 545; *Helicobia australis* associated with grasshoppers in, 57; *Megastigmus* spp. in, 565; *Pentalonia nigronervosa* transmitting disease of banana in, 289; termites in, 90, 180, 282, 545, 546; beneficial insects and biological control of insects and plants in, 56, 262, 282, 294, 367, 459, 504, 544, 545, 546; criticism and summaries of plant quarantines in, 184, 274, 344, 592; *Gambrus stokesi* introduced into U.S.A. from, 382. (See also under the various States.)
- Australia, South, *Aonidiella aurantii* on *Citrus* in, 292; orchard pests in, 159, 292; vine pests in, 164; *Chortoicetes terminifera* in, 345.
- Australia, Western, *Austroicetes cruciata* in, 56, 291; *Lepidosaphes ulmi* on apple in, 130; pests of pastures in, 131, 292; legislation dealing with control of fruit-flies in, 130; beneficial insects and biological control in, 56, 131, 292, 294; *Biscirus lapidarius* introduced into New Zealand from, 551; *Microphanurus basalis* introduced into Queensland from, 603.
- australia*, *Aceratoneuromyia* (see *Syntomosphyrum indicum*); *Pseudomicromelus* (*Dibrachys*).
- australicum*, *Trichogramma*.
- australis*, *Harpobittacus*; *Helicobia*; *Leptoglossus*; *Oedaleus*; *Typhlocyba* (see *T. froggatti*).
- Austria, *Brotolomia meticulosa* on *Cyclamen* in, 171; orchard pests in, 232, 690; *Lygus spinolae* on vines in, 45; new Cecidomyiid on *Trisetum flavescens* in, 635; toads destroying insects in, 160;

parasites of *Galerucella luteola* introduced into U.S.A. from, 324.
austriaca, *Anisophia*.

Austroicetes cruciata (*jungi*), in Australia, 56, 130, 291, 545; phases of, 545; *Cyrtomorpha flaviscutellaris* destroying eggs of, 56; baits for, 130, 291.

Autogiro, for applying dusts and sprays against forest pests, 74, 279, 645.

Autographa (see *Plusia*).

Autoserica (see *Aserica*).

avellanae, *Eriophyes*.

avenae, *Macrosiphum* (*Amphorophora*, *Aphis*).

Avocado, *Papilio scamander grayi* on, in Brazil, 23; new Eriophyid on, in California, 288; pests of, in Fiji, 641; *Xyleborus morstatti* on, in Mauritius, 611; *Eutermes costalis* attacking, in Porto Rico, 464.

Azalea, effects of insecticide treatments on, 605.

Azotus, hosts of species of, 385.

Azotus delhiensis, sp. n., parasite of *Aleurolobus barodensis* in India, 385.

Azya trinitatis, establishment of, against *Aspidiotus destructor* in Porto Rico, 502; introduced into Santo Domingo, 502.

B.

baccarum, *Dolycoris*.

bacchus, *Rhynchites*.

Bacillus cereus, measures against, causing disease in *Xylomyges* in breeding cages, 81; toxicity of, to cockroaches, 81.

Bacillus sphingidis, causing disease in *Protoparce* spp. in U.S.A., 251, 253.

Bacteria, Beneficial, 100, 251, 253, 269, 300, 302, 307, 455, 496, 587, 597, 602, 666; methods of culturing and utilising, 307, 455.

Bacteria, Injurious, 302, 463; relation of insects to, 167, 563.

Bactra truculenta (attacking nut-grass), introduced into Australia and Fiji from Hawaii, 367, 546.

badius, *Termes*; *Xyleborus*.

Bagrada hilaris, on crucifers in S. Rhodesia, 125.

bahiense, *Monalonion*.

baileyi, *Calepitrimerus*.

Bait-sprays, for *Anastrepha*, 256; doubtful value of, for *Dacus*

oleae, 270, 453; for Lepidoptera, 232, 300, 301; formulae for, 300.

Baits, for ants, 44, 87, 112, 323, 435, 665; for Coleoptera, 28, 97, 127, 185, 249, 250, 321, 322, 323, 346, 373, 466, 501, 656, 679, 683; for crickets, 124, 652; for *Ctenolepisma*, 510; for *Dysdercus*, 164; for *Forficula*, 510; for locusts and grasshoppers, 67, 92, 93, 130, 134, 240, 260, 291, 320, 476, 477, 478, 479, 480, 537, 570, 602, 637; for moths, 20, 31, 32, 89, 98, 192, 194, 273, 293, 300, 494, 496, 582, 682, 684; for Lepidopterous larvae, 32, 67, 125, 178, 213, 252, 287, 368, 379, 380, 390, 595, 609; for Trypetids, 98, 131, 270; for other Diptera, 116, 200, 520; formulae for, 32, 67, 89, 92, 98, 102, 124, 127, 131, 249, 250, 260, 270, 320, 321, 322, 323, 379, 390, 476, 478, 494, 496, 510, 520, 595, 602, 609, 652; types of containers for, 98, 435; mixer for, 478.

bajaria, *Erannis* (*Hybernica*).

bajulus, *Hylotrupes*.

Balaninus (see *Curculio*).

ballestrevii, *Megastigmus* (*Trogocarpus*).

balteatus, *Syrphus*.

Baluchistan, locusts in, 485, 559, 560; orchard pests in, 50-52, 577.

Bambarra Ground-nuts (see *Voandzeia subterranea*).

Bamboo, *Ceracris kiangsue* damaging, in China, 451; pests of, in Formosa, 340, 363; carpenter bees in, in India, 337; new Coccid on, in Japan, 624; pests of, in W. Indies, 181, 423, 501; resistance of introduced species of, to *Dinoderus minutus* in Porto Rico, 501; soaked in water against *Dinoderus* spp., 181.

Bamboo Locust (see *Ceracris kiangsue*).

Bamboo Powder-post Beetle (see *Dinoderus minutus*).

bambusae, *Asterolecanium*; *Chaetococcus*; *Idiococcus*.

Banana, pests of, in Australia, 184, 289, 329, 330, 346; *Temnoschoita quadripustulata* on, in Dahomey, 348; pests of, in Fiji, 213, 366; *Papuana huebneri* on, in Gilbert Islands, 366; *Colaspis hypochlora* on, in Br. Guiana, 524; *Cosmopolites sordidus* on, in Mysore, 291; *Dacus psidii* on, in New

- Caledonia, 131; *Erionota thrax* on, in Philippines, 451; *C. sordidus* on, in Tahiti, 365; pests of, in W. Indies, 239, 288, 289; *Pentalonia nigronervosa* and virus diseases of, 213, 288, 289; cold water treatment of rhizomes of, against *C. sordidus*, 291.
- Banana Rust Thrips (see *Scirtothrips signipennis*).
- Banana Scab Moth (see *Nacoleia octasema*).
- Banana Weevil (see *Cosmopolites sordidus*).
- bancrofti*, *Tarsonemus*.
- Banding, against *Cydia* spp., 5, 31, 114, 197, 273, 293, 383, 579, 588, 623, 639; against other Lepidoptera, 7, 28, 458, 663, 689; treatment of materials for, 197, 293, 623, 639. (See Adhesives.)
- Banyan, Chinese (see *Ficus retusa*).
- Baobab (see *Adansonia digitata*).
- Barathra brassicae*, measures against, in China, 451; on tobacco in Japan, 210; on crucifers in Russian Union, 109, 439, 589; *Trichogramma* spp. reared on, 35, 36, 109, 391, 589.
- Barbados, cotton pests in, 223, 660, 661; sugar-cane pests in, 660; *Coptotermes* in building timber in, 56, 384; beneficial insects and biological control in, 660; legislation against introduction of *Anthonomus grandis* into, 661.
- Barbarea vulgaris*, relation of wireworms to, in Siberia, 679.
- barbata*, *Platygenia*; *Sarcophaga barbata*, *Stromatium*.
- Barbitistes constrictus*, attacking conifers in Germany and Poland, 401; not predacious on *Lymantria monacha*, 401.
- Baris interstitialis*, introduction of, into Australia against *Xanthium pungens*, 546.
- Barium Chloride, uses of, as an insecticide, 232, 323, 470, 473.
- Barium Chromate, spraying with, against *Plusia orichalcea*, 577.
- Barium Fluoride, tests of toxicity of, to insects, 134, 627.
- Barium Fluosilicate, in baits, 124, 125, 478, 510, 537; dusting with, 139, 177, 199, 244, 247, 286, 373, 425, 431; carriers for, 139, 177, 247, 286, 431; spraying with, 70, 71; tests of toxicity of, to insects, 286, 373, 537, 627; formulae containing, 70, 124, 177, 247, 286, 425, 431; and Bordeaux mixture, 70; and cubé, 177; magnesium oxide as a corrective for foliage injury by, 425; penetration of leaves by, 309; problem of residues of, 177, 432; Dutox form of, 70, 425; other insecticides compared with, 177, 247, 627.
- Bark-beetles, of Russian Far East, 456; methods for calculating infestation by, 219; natural enemies of, 324, 339, 397, 473, 522; associated with *Ophiostoma ulmi* on elm, 65, 68, 77, 378, 396, 397, 529; associated with fungi on *Abies*, 284; feeding of, 391. (See Scolytids.)
- Bark-beetles, Elm (see *Hylastes rufipes* and *Scolytus multistriatus*).
- Barley, pests of, in Britain, 122, 562; pests of, in Czechoslovakia, 468, 469; pests of, in Denmark, 117; pests of, in Japan, 208, 209, 556; *Mayetiola destructor* on, in Morocco, 691; pests of, in New Zealand, 547, 548; *Syringopais temperatella* on, in Palestine, 127; pests of, in Russian Union, 312, 454, 554; thrips on, in Sweden, 121; pests of, in U.S.A., 32, 284.
- Barley (Stored), pests in, and their control, 119, 120, 196, 318, 319.
- Barley Aphid (see *Brachycolus noxius*).
- barodensis*, *Aleurolobus*.
- Barriers, against grasshoppers and locusts, 214, 476, 478.
- Barringtonia speciosa*, *Dacus passiflorae* on, in Fiji, 212.
- basalis*, *Microphanurus*; *Milonia basilinea*, *Trachea*.
- basizonus*, *Microcryptus*.
- Bassus* [Braconid] (see *Microdus*).
- Bassus* [Ichneumonid], parasite of *Cydia molesta* in Victoria, 640.
- Basswood (see *Tilia glabra*).
- batatae*, *Euscepes* (see *E. postfasciatus*).
- Baumspritzmittel, 45, 65, 298. (See Tar Distillates.)
- Bean Aphid, Black (see *Aphis fabae*).
- Bean Beetle, Mexican (see *Epilachna varivestis*).
- Bean Bruchid (see *Bruchus obtectus*).
- Bean Fly (see *Agromyza phaseoli*).
- Bean Thrips (see *Hercothrips fasciatus*).
- Beans, *Heliothis armigera* on, in S. Africa, 489; *Aphis fabae* on, in Britain, 674; pests of, in Fiji, 641; *Cantharis obscura* on, in

- France, 623; pests of, in Germany, 334, 686; pests of, in Japan, 208, 618; *Maruca testulalis* on, in Mauritius, 611; pests of, in New South Wales, 58, 449; *Piesma quadratum* not surviving on, in Poland, 351; pests of, in U.S.A., 32, 69, 77, 82, 142, 240, 340, 370, 421, 432, 599, 600; time of sowing and varieties of, in relation to *A. fabae*, 334; *Ceresa bubalus* reared on, 390; leaves of, trapping small insects, 142; Aphids and virus diseases in, 370, 686; Rhynchota associated with *Nematospora* in, 389; translocation of derris in, 234; tests of toxicity of insecticides to, 79, 422, 426.
- Beans (Stored), pests and their control in, 173, 199, 208, 521; nutritive value of groats of, for *Ephestia kuehniella*, 64.
- Beans, Broad or Horse (see Beans).
- Beans, Lima (see Lima Beans).
- Beans, Soy (see Soy Beans).
- Beans, Velvet (see *Stizolobium*).
- Beauveria* spp., infesting insects, 39, 63, 91, 92, 306, 307, 334, 608, 688; experiments with, and attempted utilisation of, 92, 105, 106, 306, 307, 688.
- beckii*, *Lepidosaphes*.
- Bedellia somnulentella*, parasites of, on bindweed in Kansas, 375.
- bedelliae*, *Apanteles*.
- Beech, pests of, in Germany, 299, 353, 354; new mite on, in Holland, 301; *Barbitistes constrictus* feeding on, 401; effect of feeding *Lymantria monacha* on, 399.
- Bees, Carpenter (see *Xylocopa*).
- Bees, Honey, *Acarapis woodi* attacking, 169; insect enemies of, 238, 515, 631; experimentally infested with *Beauveria bassiana*, 688; question of risk of insecticides to, 4, 98, 101, 156, 231, 301, 402.
- Beet, pests of, in Britain, 96, 673, 674; legislation restricting importation of, into Britain, 356; *Cicadella viridis* on, in China, 451; pests of, in Czechoslovakia, 468, 469, 470; pests of, in Denmark, 117; *Hymenia recurvalis* on, in Fiji, 641; pests of, in Germany, 686, 687, 688; *Cleonus mendicus* on, in Italy, 301; pests of, in Morocco, 283; *H. recurvalis* a potential pest of, in New South Wales, 639; *Piesma* spp. on, in Poland, 105, 163, 350-352; pests of, in Russian Union, 152, 321, 322, 407, 677, 678, 679, 680, 684; book on pests and diseases of, in Russian Union, 439; *Loxostege sticticalis* on, in Saskatchewan, 27; pests of, in U.S.A., 286, 381, 412, 593; insects and virus diseases of, 163, 286, 351, 356, 412, 439, 686, 688; barium chloride causing injury to, 470; trap-strips of, as a protection against pests of *Scorzonera tau-saghyz*, 679, 680; mites in stored seed of, 686.
- Beet Bug (see *Piesma quadratum*).
- Beet Leafhopper (see *Eutettix tenellus*).
- Beet Webworm (see *Loxostege sticticalis*).
- Beet Weevils (see *Cleonus mendicus* and *C. punctiventris*).
- Begonia, *Monalonion flavisignatum* on, in Brazil, 566.
- behri*, *Etiella*.
- Belgium, *Leptinotarsa decemlineata* in, 106, 583; legislation against introduction of *L. decemlineata* into Britain from, 356.
- bella*, *Strumia*.
- Bemisia*, transmission of cassava mosaic by, in Africa, 94, 153; transmitting virus disease in tobacco in Africa and Netherlands Indies, 124, 125, 360, 493, 637; review of food-plants and distribution of species of, 637.
- Bemisia gossypiperda*, 94; on cotton in India, 560, 576; possibly associated with "crazy top" in cotton in Sudan, 574; measures against, 560.
- Bemisia longispina*, characters of, 637.
- Bemisia manihotis*, characters of, 637.
- Bemisia nigeriensis*, 94.
- Bemisia rhodesiaensis*, measures against, transmitting leaf-curl in tobacco in S. Rhodesia, 124, 125.
- Bemisia vayssierei*, sp. n., possibly transmitting disease of tobacco in Madagascar, 637.
- beneficiens*, *Telenomus* (*Phanurus*).
- Bent Grass (see *Agrostis*).
- Bentonite, toxicity of dusts of, to *Bruchus obtectus*, 531; and nicotine sulphate, dusting with, against *Pyrausta nubilalis*, 179; uses of, in sprays, 133, 179, 272, 273, 525, 532, 545; problem of

- residues of, on apples, **133, 525** ; formulae containing, **133, 179, 532** ; preventing detonation of sulphur nitride, **79** ; comparison of types of, **545**.
- Bentonite Sulphur, in mixed sprays, **664**.
- Benzene, soil treated with, against *Leptinotarsa decemlineata*, **583** ; fumigation of stored grain with, against mites, **319** ; as a solvent, **332, 493** ; toxicity of derivatives of, to *Cydia pomonella*, **419**.
- Ber (see *Zizyphus jujuba*).
- bergenstammi*, *Apiomyia* (*Oligotrophus*).
- bergi*, *Neomaskellia*.
- bergrothi*, *Helopeltis*.
- berlesei*, *Caloglyphus* ; *Prospaltella*.
- Bermuda, risk of introduction of *Popillia japonica* from U.S.A. into, **85, 86**.
- Bessa selecta* (see *Ptychomyia*).
- Besserioides sexualis*, gen. et sp. n., parasite of *Dysdercus sidae* in Queensland, **57**.
- Beta-naphthol, bands treated with, against *Cydia* spp., **197, 293, 639** ; and oils, formula containing, **197** ; unsatisfactory in sprays against *Cydia pomonella*, **134**.
- Betula* (see Birch).
- Betula japonica*, Lamiids on, in Russian Far East, **42**.
- Betula lenta*, resistant to *Phyllotoma nemorata* in Quebec, **275**.
- betulae*, *Byctiscus* ; *Kuwania* ; *Pulvinaria* ; *Rhynchites*.
- betuleti*, *Byctiscus* (see *B. betulae*).
- Bhima idiota* (see *Pyrosis*).
- biannulipes*, *Peregrinator*.
- Bibio hortulanus*, on barley in Denmark, **117**.
- bicolor*, *Leefmansia* ; *Metriona* ; *Olibrus* ; *Phloeosinus* ; *Rhynchites* (*Merhynchites*) ; *Spinaria*.
- bidens*, *Picromerus*.
- bifasciatus*, *Anastatus* ; *Leptomastix*.
- bifida*, *Cerura*.
- biformis*, *Platypus*.
- Big Bud Mite (see *Eriophyes ribis*).
- Bigonicheta setipennis*, liberation of, against *Forficula auricularia* in U.S.A., **379**.
- biguttatus*, *Coptocercus*.
- biguttula*, *Empoasca* (*Chlorita*).
- bigutulus*, *Chorthippus* ; *Cremastus* (see *C. flavo-orbitalis*).
- bilineata*, *Cidaria* (*Hydriomena*) ; *Lema*.
- bilineatus*, *Prosoestus* (*Derelomus*).
- Bill-posters' Paste, as an adhesive for cryolite dips, **380, 652**.
- bimaculata*, *Virachola* (*Deudorix*).
- binotalis*, *Crocidolomia*.
- binotatus*, *Anisodactylus* ; *Stenotus*.
- Bioclimatics, treatise on, **325-327**.
- bioculatus*, *Paratetranychus* (*Tetranychus*).
- Biological Control, general discussions and papers on, **161, 302, 392, 436, 514**.
- Biosteres*, parasite of *Dacus* spp. in Fiji, **212**.
- Biosteres* (*Opius*) *fijiensis*, parasite of *Dacus* spp. in Fiji, **212**.
- Biosteres longicaudatus*, parasite of *Dacus ferrugineus* in Madras, **577**.
- Biosteres persulcatus*, parasite of *Dacus ferrugineus* in Madras, **577**.
- Biosteres tryoni*, parasite of *Dacus* in Fiji, **213**.
- bipartita*, *Lachnosterna* (*Phyllophaga*).
- bipunctata*, *Adalia*.
- bipunctatus*, *Nephotettix*.
- bipunctifer*, *Schoenobius*.
- bipustulatus*, *Chilocorus*.
- Birch, *Melolontha hippocastani* on, in Finland, **267** ; *Phyllotoma nemorata* on, in Quebec, **275** ; *Polyphylla fullo* damaging roots of, in Germany, **522** ; food-plant of *Cryptorrhynchus lapathi*, **563** ; *Pyrausta nubilalis* experimentally fed on, **229** ; Asiatic Coleoptera in timber of, **465**.
- Birds, destroying noxious insects, **78, 97, 100, 105, 114, 122, 159, 217, 251, 253, 387, 394, 397, 449, 465, 470, 496, 504, 588, 608, 632, 633** ; destroying beneficial insects, **159, 282, 550, 564** ; question of danger of arsenical insecticides to, **159** ; grain mites spread by, **552** ; relation of household pests to nests of, **101, 513**.
- bisaltide*, *Doleschallia*.
- Biscirus lapidarius* (predacious on *Smynturus viridis*), occurrence and utilisation of, in Australia and New Zealand, **131, 292, 551**.
- biselliella*, *Tineola*.
- Bitter Cassava (see *Manihot utilissima*).
- Bittersweet (see *Solanum dulcamara*).
- bituberculatus*, *Dolichoderus* ; *Tetranychus*.
- Bitumen Emulsion, against *Hylemia brassicae*, **116**.
- bivittata*, *Metriona*.
- bivittatus*, *Melanoplus*.

- Bixa orellana*, *Calotermes papua* on, in New Guinea Territory, 544.
- bizanensis*, *Microterys*.
- Black Cyanide, Russian form of calcium cyanide (*q.v.*), 149, 683.
- Black Leaf, 155, 534.
- Blackberry, Aphid on, in Britain, 333; *Carposina adreptella* on, in New Zealand, 37; risk of introducing insects into New Zealand to destroy, 449; pests of, in U.S.A., 79, 178; *Dasyneura plicatrix* on, 673.
- blackburni*, *Lamprosema*.
- Blackthorn (see *Prunus spinosa*).
- blanda*, *Systema taeniata*.
- blandiatrix*, *Eutelia*.
- Blastophagus* (see *Myelophilus*).
- Blatta orientalis*, temperature and humidity relations of, 224.
- Blepharipeza gonioformis* (see *Tritaxys*).
- Blissus hirtus*, damaging lawns in Canada, 601; recorded as *B. leucopterus*, 601.
- Blissus leucopterus*, *B. hirtus* recorded as, in Canada, 601; measures against, damaging lawns in Trinidad, 25; on cereals in U.S.A., 261, 274, 284, 374; attractiveness of different cereals for, 284; resistance of varieties of *Sorghum* and wheat to, 274, 374; *Collops quadrimaculatus* predacious on, 261.
- Blood Albumen, as a wetting agent for sulphur, 257, 460; as an emulsifier for wool grease, 426; basic copper arsenate compatible with, 421.
- Boarmia selenaria dianaria*, adaptation of, to *Citrus* in Sicily, 630.
- boas*, *Oryctes*.
- Boehmeria nivea*, pests of, in Transcaucasia, 587.
- boernerii*, *Chermes* (*Pineus*).
- boetica*, *Cosmolyce* (*Lampides*).
- Bolax flavolineatus*, measures against, on vines in Brazil, 34.
- Bolivia, summary of plant quarantines in, 592.
- bombina*, *Cratosomus*.
- Bombyx mori*, 586; experimentally infested with *Beauveria bassiana*, 688; Dermestids attacking, 196, 198; review of literature on Arthropods injurious to, 224; parasitised by *Sturmia sericariae* in Japan, 442, 443; used in tests of insecticides, 298, 688.
- bondari*, *Chalcodermus*; *Conotrachelus*; *Monalonion*.
- boninsis*, *Pseudococcus*.
- Books, pests of, and their control in Fiji, 366.
- Borassus*, destruction of, against *Oryctes* spp. in Dahomey, 347.
- Borax, in bait for Trypetids, 98, 270; effect of using, to remove spray residues from apples, 648; and boric acid, treatment of wood with, against *Lyctus brunneus*, 509, 510.
- Bordeaux Mixture, use of, against *Aesiotus*, 602; against *Empoasca* and *Epitrix*, 53, 70, 342, 501; repellent to *Leptinotarsa*, 584; against *Monalonion*, 566; apparently reducing virus infection of potato, 157; formulae for, 70, 278, 342, 425, 536, 602; formulae containing, 70, 125, 127, 192, 278, 342, 422, 425, 536; and arsenicals, 34, 70, 125, 139, 188, 192, 207, 235, 342, 421, 534, 583, 643, 653, 662; interactions of, with calcium arsenate, 171, 373; and barium fluosilicate, 70; and cryolite, 425; and derrisol, 127; and nicotine, 125, 501, 534, 536; and oil emulsions, 188, 192, 278, 497, 536; thiuram sulphides compatible with, 532; causing foliage injury, 643; magnesium oxide as a corrective for injury by, 425; interactions of, with other sprays on *Citrus*, 278.
- borgmeieri*, *Adesmus*.
- Boric Acid, treatment of timber with, against *Lyctus*, 509; use of, in removing spray residues from apples, 648, 649.
- Borkhausenia pseudospretella*, damaging wine corks in Scotland, 122; characters of eggs of, 49.
- bormansi*, *Dolichopoda*.
- Borveria verticillata*, Larva americana associated with, 85.
- Bostrychophytes cornutus*, on *Vitex* timber in Mauritius, 611.
- Botanical Collections, damaged by *Trogoderma tarsale*, 196.
- Bothriophryne*, key to species of, 503; characters of, 504.
- Bothriophryne dispar*, sp. n., parasite of *Ceroplastes* in Tanganyika, 503.
- Bothriophryne fuscicornis*, sp. n., parasite of *Ceroplastes* in S. Africa, 503.
- Bothriophryne purpurascens*, sp. n., parasite of *Ceroplastes* in S. Africa, 503.
- Bothriophryne* (*Trichomasthus*) *tenuicornis*, 504.

- Bothynoderes punctiventris* (see *Cleonus*).
botrana, Polychrosis.
Botrytis bassiana (see *Beauveria*).
boucheanus, *Dibrachys* (see *D. cavus*).
bowringi, *Colaphellus*.
Box-elder Bug (see *Leptocoris trivittatus*).
brachialis, *Bruchus*.
Brachmia macroscopa, effect of temperature on, on sweet potato in Korea, 362.
Brachonyx pineti, bionomics and control of, in Rumania, 355.
Brachonyx pineti var. *obscurella*, on pine in Rumania, 355.
Brachyacma palpigera, on *Tephrosia toxicaria* in Porto Rico, 502.
Brachycolus noxius, measures against, on wheat in Central Asia, 453, 454.
Brachylacon (see *Lacon*).
Brachymeria, parasite of *Earias* and *Platyedra* in Philippines, 184.
Brachymeria euploae, associated with *Virachola isocrates* in India, 385; bionomics of, parasitising *Oreta carnea* in Sumatra, 385, 386.
Brachymeria excarinata (parasite of *Plutella maculipennis*), bionomics of, in India, 575, 576.
Brachymeria obscurata, hosts of, in Japan, 211.
Brachymeria vitripennis, parasite of *Cassida nebulosa* in Morocco, 284.
brachypterus, *Microcryptus*.
Brachystegia, 62.
Brachytrypes membranaceus, measures against, on tobacco in S. Rhodesia, 124.
Brachytrypes portentosus, soil characters in relation to, in sugar-cane fields in Formosa, 206.
Bracon abscissor (see *Microbracon*).
Bracon nicevillei (see *Glyptomorpha*).
Bracon triangularis (see *Microbracon*).
Braconids, list of, in Germany, 113.
Bran (including pollard), insects infesting, 64, 224; in baits, 32, 67, 68, 92, 130, 134, 178, 240, 249, 260, 291, 321, 390, 476, 478, 511, 520, 537, 602; baits for Trypetids prepared from, 98, 270; formulae containing, 32, 92, 260, 321, 390, 476, 511, 520, 602.
brasiliiana, *Acaulona*.
brasiliensis, *Clistomorpha* (*Hyalomyodes*); *Eurhizococcus*; *Gastero-*
cercodes; *Hyalomyia* (*Alophoropsis*); *Pseudiatata*.
brassicae, *Aleurodes*; *Barathra*; *Brevicoryne* (*Aphis*); *Dasyneura*; *Hylemyia* (*Chortophila*, *Delia*); *Phaedon*; *Pieris*; *Plusia* (*Autographa*); *Tyloderma*.
Brassolis sophorae, on coconut in Br. Guiana, 524.
braueri, *Tritaxys*.
brauneri, *Otiorrhynchus*.
Brazil, pests of Anonaceae in, 566, 567; new weevil on cabbage in, 132; cacao pests in, 566, 662; pests of *Cocos* spp. in, 22, 661; coffee pests in, 34, 188, 238; cotton pests in, 22, 34, 86, 136, 413; pests of grape-vines in, 34; *Phthorimaea operculella* in, 289; miscellaneous pests in, 23, 86, 290; new Coccids in, 48, 623; *Nosema* infesting Lepidoptera in, 459; beneficial insects and biological control in, 22, 23, 34, 85, 86, 87, 137, 183, 188, 238, 253, 289, 414, 505; *Larra americana* introduced into Porto Rico from, 85, 435.
brevicollis, *Doclostaurus crucigerus*.
brevicomis, *Dendroctonus*.
brevicornis, Wesm., *Microbracon*.
brevicornis, auct., *Microbracon* (see *M. hebetor*).
Brevicoryne brassicae (on crucifers), in Britain, 332; measures against, in China, 450; resistance of, to abnormal cold in France, 622; relation of, to mosaic disease of turnip, etc., in New York, 274; in S. Rhodesia, 125; in Russian Union, 439; in Tasmania, 21.
brevipes, *Pseudococcus*.
brevis, *Calotermes* (*Cryptotermes*); *Dinoderus*; *Hoplocampa*; *Stylocryptus*.
brevistigma, *Tetrastichus*.
brevistylus, *Dacus* (see *D. ciliatus*).
brevitarsis, *Liocola*.
brevivalvus, *Megastigmus* (*Epimegastigmus*).
Brithys pancratii, on amaryllidaceous plants in S. Rhodesia, 125.
British Columbia, Coccids of, 511; miscellaneous pests in, 66, 568; proposed introduction of parasites from Britain into, against *Phytomyza ilicis*, 669.
British Isles, cereal pests in, 96, 122, 332, 562; forest pests in, 58, 262, 391, 504; bark-beetles associated with Dutch elm disease in, 65; pests and diseases of

- willows in, 562, 563, 627 ; pests of greenhouse and ornamental plants in, 115, 295, 333, 356, 437, 512, 519, 669, 673 ; pests of hops in, 1, 333 ; mushroom mites in, 1 ; orchard pests in, 236, 332, 333, 676 ; pests of small fruits in, 2, 236, 333, 395, 596 ; list of Coleoptera associated with fruits in, 160 ; spray programmes for fruits in, 396 ; pests of stored products in, 122, 154, 265, 623, 638, 666 ; pests of turf and grasses in, 95, 122, 635 ; pests of vegetables and root crops in, 38, 61, 96, 115, 116, 122, 236, 262, 265, 332, 333, 562, 563, 578, 671, 672, 673, 674, 675 ; problem of wireworms in, 96 ; *Pyrausta nubilalis* in, 116, 295 ; *Stenomalus muscarum* in houses in, 201 ; new *Thomasiniana* on hawthorn in, 673 ; Aphids and virus diseases in, 236, 395, 563, 671, 672 ; beneficial insects in, 38, 58, 95, 115, 122, 262, 265, 390, 391, 504, 562, 628, 632, 669 ; utilisation of *Encarsia formosa* in, 333, 437 ; new mite predacious on *Thrips tabaci* in, 672 ; plant pest legislation in, 355, 356 ; introduction of beneficial insects into other countries from, 38, 39, 162, 262, 282, 504, 669.
- bromeliae*, *Diaspis*.
- Bromus*, relation of *Dociostaurus maroccanus* to, in Transcaucasia, 321 ; new Anthomyiid on, in Siberia, 312.
- Bromus secalinus*, *Ochsenheimeria taurella* and white ear in, in Russian Union, 680.
- Brontispa limbata*, on palms in Mauritius, 611.
- Brood, meaning of term, 137.
- Brotolomia meticulosa*, bionomics of, on *Cyclamen* in greenhouses in Austria, 171.
- Brown-tail Moth (see *Nygmia phaeorrhoea*).
- Bruchidius* (see *Bruchus*).
- Bruchobius mayri* (see *Sphaerakis*).
- Bruchocida orientalis*, parasite of *Pemphres affinis* in India, 506.
- Bruchophagus gibbus*, on lucerne in Russia, 108, 475.
- Bruchus analis*, bionomics of, on lima beans in Japan, 617 ; intercepted in Japan, 208.
- Bruchus brachialis* (Vetch Bruchid), parasites and biological control of, in U.S.A., 381, 599.
- Bruchus chinensis*, fumigation against, in China, 451 ; bionomics of, in Japan, 208, 361, 557, 616, 617.
- Bruchus cisti*, on wild lupins in Italy and Sicily, 201, 495 ; not found in Iberian Peninsula, 495.
- Bruchus maculatus*, intercepted in beans in Japan, 208 ; larval anatomy and hatching of, 280.
- Bruchus obtectus* (Bean Bruchid), in Italy, 199, 200 ; intercepted in Japan, 208 ; nutritional studies on, 624 ; experiment with *Trichogramma evanescens* and, 36 ; tests of insecticides against, 199, 200, 531.
- Bruchus phaseoli*, bionomics of, on lima beans in Japan, 617.
- Bruchus pisorum* (Pea Bruchid), in Czechoslovakia, 468 ; on beans in Japan, 208 ; in Russia, 147 ; in U.S.A., 325, 456 ; *Triaspis thoracicus* introduced into U.S.A. against, 381 ; bionomics of, 208, 325, 456 ; X-rays for detecting, in stored peas, 147 ; measures against, 325, 456.
- Bruchus quadrimaculatus* (see *B. maculatus*).
- Bruchus rufimanus*, bionomics of, on beans in Japan, 208 ; not occurring in Formosa, 208.
- Bruchus seminarius*, on wild serradella in Portugal, 495.
- Bruchus terrenus*, bionomics of, on beans in Japan, 208.
- brumata*, *Operophtera* (*Cheimatobia*).
- brunneus*, *Heterobostrychus* ; *Lyctus brunsvicensis*, *Chrysomela* (*Chrysolina*).
- Bryobia praetiosa*, measures against, in orchards in New South Wales and California, 57, 261, 432.
- Bryobia sarothamni*, sp. n., on *Sarothamnus* in Holland, 301.
- bubalis*, *Ceresa*.
- Bucculatrix gossypii*, on cotton in Queensland, 603.
- Bucentes geniculata*, parasite of *Tipula* spp. in Britain, 95.
- bucyrus*, *Cactoblastis*.
- Bufo marinus* (destroying insects), in Porto Rico, 656 ; establishment of, in Fiji, 641 ; utilisation of, in Florida, 656 ; probable establishment of, in Philippines, 452 ; establishment of, in Queensland, 185.
- Bufo viridis*, observations on, in Russia, 407.

- Bufo vulgaris*, destroying insects in Austria, 160.
- bugandaensis*, *Anagyrus*.
- Building Timbers, Coleoptera in, 6, 7, 78, 110, 203, 204, 268, 321, 322, 335, 469, 499, 520, 584, 600; termites in, 55, 56, 125, 180, 239, 464, 465, 498, 499, 545, 641, 693; other pests of, 337, 498, 499, 693.
- Bulgaria, new Coccid on roses in, 402.
- bulgariense*, *Lecanium*.
- Bumelia lycioides*, host-fruit of *Ceratitis capitata* in France, 195.
- buoliana*, *Rhyacionia* (*Evetria*).
- Bupalus piniarius* (Pine Geometrid), in Czechoslovakia, 469; measures against, in Germany, 231, 512.
- Buprestis aurulenta*, on pines in California, 329; in New Zealand, 329.
- Buprestis langi*, in dock timber in U.S.A., 499.
- buqueti*, *Thaneroclerus*.
- Burma, forest and timber pests in, 612, 692, 693; catalogue of Longicorns in, 612; beneficial insects and biological control in, 693; parasites introduced into India from, 612, 693.
- Busseola fusca*, legislative measures against, on maize in Kenya, 666; new Tachinid parasite of, in S. Rhodesia, 567.
- β butoxy β' thiocyanodiethylether, 155, 236, 258, 332. (See Thiocyanates.)
- Butternut (see *Juglans cinerea*).
- Butyl Phenyl-phenol Sodium Sulphonate, 179.
- buxi*, *Pinnaspis*.
- buxtoni*, *Calotermes*; *Margarodes*.
- Buzura suppressaria*, bionomics and control of, on tung-oil tree in China, 614.
- Byctiscus betulae* (*betuleti*), on vines in Russian Union, 403.
- Bysocrypta fusiformis*, susceptibility of varieties of elm to, in Japan, 443.
- Bysocrypta gallarum*, susceptibility of varieties of elms to, in Japan, 443.
- Bythoscopus mundus*, on grapevines and willow in Japan, 440.
- Byturus unicolor*, measures against, on raspberry in Washington, 380.
- Cabbage, pests of, in Australia, 21, 545; new weevil on, in Brazil, 132; pests of, in Britain, 61, 96, 97, 116, 265, 578, 608; *Colaphellus bowringi* on, in China, 450; *Crocidolomia binotalis* on, in Belgian Congo, 572; *Athalia rosae* on, in Denmark, 117; pests of, in Fiji, 641; pests of, in France, 459, 622; pests of, in Germany, 110, 511, 636, 686, 687; *Contarinia nasturtii* on, in Holland, 514; *Plutella maculipennis* on, in Jamaica, 239; *Forficula auricularia* feeding on, in Ontario, 601; pests of, in Russian Union, 109, 153, 306, 307, 310, 316, 320, 455, 589, 679; *Pieris brassicae* on, in Sweden, 609; pests of, in U.S.A., 32, 33, 249, 250, 370, 372, 379, 541; susceptibility of varieties of, to pests, 61, 317; Aphid transmitting virus disease of, 686; problem of arsenical residues on, 370.
- Cabbage Bug, Harlequin (see *Murgantia histrionica*).
- Cabbage Butterflies (see *Pieris brassicae* and *P. rapae*).
- Cabbage Fly (see *Hylemyia brassicae*).
- Cabbage Whitefly (see *Aleurodes brassicae*).
- Cacao, pests of, in Brazil, 566, 662; *Monalonion* on, in Colombia, 566; *Helopeltis antonii* on, in Java, 523; pests of, in New Guinea Territory, 277, 544; *Acrocercops cramerella* on, in Philippines, 452; thrips on, in W. Indies, 24, 25.
- Cacao (Stored), pests in, and their control, 64, 154, 521, 584, 638.
- Cacao Thrips (see *Selenothrips rubrocinctus*).
- Cacoecia* (see *Tortrix*).
- Cactoblastis bucyrus*, *C. doddi* previously identified as, 459.
- Cactoblastis cactorum* (destroying *Opuntia*), new *Nosema* infesting, in S. Africa, 459; utilisation of, in Queensland, 345.
- Cactoblastis doddi*, attempted establishment of, against *Opuntia* in S. Africa and Australia, 459; new *Nosema* infesting, 459.
- cactorum*, *Cactoblastis*.
- cadaverum*, *Glycyphagus*.
- Cadmium, compounds of, ineffective in baits for grasshoppers, 134.

C.

C.P. 100 (see Cyclohexylamine Derivatives).

- Cadurcia vanderwulpi*, sp. n., parasite of *Hapalia machaeralis* in India, 263.
- caementarium*, *Sceliphron*.
- caesareus*, *Staphylinus*.
- Cages, for rearing and studying insects, 28, 30, 78, 81, 345.
- caja*, *Arctia*.
- Cajanus cajan* (*indicus*), *Corythuca gossypii* on, in Jamaica, 239; *Etiella behri* on, in Seychelles, 336; *Inglisia conchiformis* on, in Uganda, 40.
- calacte*, *Macrocentrus*.
- Calamagrostis epigeios*, relation of Pentatomid cereal pests to, in Germany, 631.
- Calandra granaria* (Grain Weevil), in Germany, 582; in Poland, 162; in Russian Union, 304, 551, 585, 685; in Sweden, 118-120; in U.S.A., 341; movement of, in stored grain, 585; bionomics of, 118-120, 305; parasite of, 304, 551; measures and fumigation tests against, 120, 162, 309, 341, 344, 585, 685; tests of Naaki dust against, 582.
- Calandra oryzae* (in stored cereals), in China, 451; in Kenya, 667; parasitised by *Lariophagus* in Italy, 199; in Japan, 339, 360; mass rearing of *Lariophagus* on, in Russia, 304; in Sweden, 118-120; in U.S.A., 248, 341; bionomics of, 104, 118-120, 305; feeding and oviposition preferences of, 64, 65, 119, 339; water content of adults of, killed by desiccation, 585; uses and tests of fumigants against, 120, 341, 451; other measures against, 120, 248, 360, 667.
- Calandra sasakii*, measures against, in stored rice in Japan, 360.
- calandrae*, *Aplastomorpha*.
- calcarator*, *Zebe* (*Phylacter*).
- Calcid, 165.
- calcitator*, *Collyria*.
- Calcium Arsenate, against beet pests, 283, 451, 470; against Lepidoptera on cabbage, 370, 380; against cotton pests, 164, 243, 244, 245, 246, 247, 380, 417, 418; effects of, on infestation by *Aphis gossypii*, 164, 243; against forest pests, 74, 428, 461, 645; against pests of leguminous plants, 82, 108, 258, 373; against orchard pests, 70, 273, 383, 528, 610, 662, 664; against pests of solanaceous plants, 67, 70, 158, 342, 372, 431, 525, 583, 634; against pests of sweet potato, 286, 373, 445; against pests of other crops, 191, 364, 378, 426, 441; in bait against *Heliothis*, 609; soil treatment with, against *Lachnosterna*, 425, 447; tests of toxicity of, to insects, 243, 246, 249, 277, 286, 528; application of, from aircraft, 74, 610, 645; formulae for, in dusts, 191, 243, 244, 245, 246, 247, 277, 283, 342, 372, 380, 417, 418, 426, 461; carriers for, 191, 246, 247, 277, 283, 372, 380, 418, 426, 461; spraying with, 70, 158, 159, 247, 273, 283, 342, 373, 383, 441, 445, 451, 470, 528, 529, 583, 610, 634, 661, 664; adhesives and spreaders for, 70, 373, 445; mopping mixture containing, 247; and cubé, 417; and bentonite sulphur, 664; and Bordeaux mixture, 70, 342, 373, 584, 662; effects of, on suspension capacity of Bordeaux mixture, 171; and lime, 283, 451, 664; effect of addition of magnesium sulphate and lime to, 158, 634; and lime-sulphur, 664; and nicotine sulphate, 529; and oil emulsions, 529; and Paris green, 243, 244, 245, 417, 418; and sodium fluosilicate, 283; and sulphur, 244, 245, 246, 247, 380, 417; particle size and other factors affecting toxicity of, 243, 246, 528; preparation and forms of, 372, 373, 643; standards for, 115; and injury to plants, 82, 247, 248, 380, 529; correctives for foliage injury by, 373; residues of, on grapes, 191; question of danger of, to birds, 159; other insecticides compared with, 79, 243, 244, 245, 246, 247, 249, 250, 373, 417, 441, 470, 525, 627, 634.
- Calcium Arsenite, dusting with, against lucerne weevils, 108; toxicity of, to insects and plants, 627.
- Calcium Caseinate, as a spreader for sprays, 207, 208, 279, 330, 445; basic copper arsenate compatible with, 421; dusting sulphur made wettable by, 460.
- Calcium Chloroacetate, dusting with, 239.
- Calcium Cyanamide, tests of action of, on insects, 200; experiments with, against *Leptinotarsa decemlineata*, 107, 158, 159, 349; soil

- treatment with, against other pests, **358, 520, 617, 619.**
- Calcium Cyanide, against ants, **24, 287**; dusting with, **463, 561**; fumigation of *Citrus* with, against Coccids, **149, 150, 165**; as a greenhouse fumigant, **357, 526**; fumigation of mushroom houses with, **260**; against wireworms, **683**; causing injury to carnations, **526.**
- Calcium Fluoride, in baits for grasshoppers, **134.**
- Calendula officinalis*, not attacked by *Micromyzus oliveri* in Washington, **541.**
- Calepitrimerus baileyi*, gen. et sp. n., on apple in California, **33.**
- Calidea*, key to species of, in Ethiopian Region, **360**; associated with *Nematospora* and boll rots, **360, 389.**
- calidella*, *Ephestia*.
- California, *Citrus* pests in, **55, 261, 342, 343, 377, 424, 425, 432-434, 459-461, 649, 650**; pests of forest and shade trees in, **140, 144, 284, 329, 569, 599, 649**; miscellaneous pests in, **239, 569, 592**; orchard pests in, **33, 34, 261, 383, 409, 432, 434, 649, 650**; *Stromatium fulvum* in imported timber in, **160**; vegetable pests in, **83, 240, 379, 431, 590, 599, 600**; Aphids of, **261, 590**; records and new species of Eriophyids in, **33, 55, 288, 409**; grasshopper surveys in, **569**; Symphyla in, **411**; wireworms in, **379, 410**; Aphids and virus diseases of celery, etc., in, **590, 591**; beneficial insects and biological control in, **30, 133, 144, 410, 424, 434, 437, 569**; *Lasioderma serricorne* imported into Germany in beans from, **521.**
- californica*, *Plusia* (*Autographa*).
- californicus*, *Phelates* (*Limonius*); *Prionus*.
- caliginosellus*, *Crambus*.
- Caliroa annulipes*, on lime in Germany, **204.**
- Caliroa limacina* (*cerasi*, auct.) (on fruit and nut trees), in Australia, **21, 279**; new *Trineptis* probably parasitic on, in California, **434**; in Germany, **114**; bionomics of, **21, 114**; measures against, **21, 279.**
- Callabismodes tabaci*, parasite of, in Brazil, **183.**
- Calliceras kamiya*, sp. n., hyperparasite of *Dendrolimus spectabilis* in Japan, **91.**
- Calliceras manilae* (see *Ceraphron*).
- Callidium antennatum hesperum*, in building timber in U.S.A., **499.**
- Calliephialtes* (see *Ephialtes*).
- Callimome druparum*, on apple in New York, **533.**
- Calliptamus italicus*, in Central Asia, **627**; in Cyprus, **270**; financial loss due to, in Greece, **478**; in Jugoslavia, **479**; in Libya, **478**; in Poland, **9**; breeding areas of, in Spain, **477**; crops attacked by, **9, 478**; measures against, **477, 478**; tests of arsenical and fluorine compounds against, **627.**
- Callopietria floridensis*, measures against, on greenhouse ferns in N. America, **592.**
- callosa*, *Sitona*.
- Calocoris norvegicus*, on potato in Britain, **332.**
- Caloglyphus*, bionomics and identity of species of, on mushrooms in Britain, **1.**
- Caloglyphus berlesei*, **1.**
- Calomel (see Mercurous Chloride).
- Calomycterus setarius*, distribution of, in U.S.A., **600.**
- Calopogonium coeruleum*, rotenone in, **502.**
- Calopogonium orthocarpum*, rotenone in, **502.**
- Caloptenus italicus* (see *Calliptamus*).
- Calosoma*, *Pinthaeus sanguinipes* predacious on, in Germany, **354.**
- Calosoma inquisitor*, predacious on forest pests in Germany and Poland, **354, 438.**
- Calosoma sycophanta* (predacious on *Lymantria* spp.), bionomics and suggested utilisation of, in Germany, **170, 354**; utilisation of, in U.S.A., **170.**
- Calotermes*, in Australia, **545.**
- Calotermes brevis*, damaging furniture and building timbers in W. Indies, **55, 56, 239, 434, 464, 465**; factors increasing damage by, in Jamaica, **239**; susceptibility of varieties of timber to, **434, 465**; characters of, **55**; measures against, **55, 465.**
- Calotermes buxtoni*, in building timbers in Fiji, **641.**
- Calotermes papua*, measures against, damaging cacao and *Bixa* in New Guinea territory, **544.**

- Calotermes repandus*, in building timbers in Fiji, 641.
- Calotermes taveuniensis*, in Fiji, 641.
- Calotropis gigantea*, *Poecilocerus pictus* on, in India, 577.
- Calpe emarginata*, bionomics of, in Japan, 209.
- Calpodes ethlius*, measures against, on arrowroot in St. Vincent, 271.
- calthae*, *Aphalara*.
- Calymnia trapezina*, possibly predacious on *Erannis* spp. in Poland, 438.
- Calyptus strigator*, parasite of *Pissodes validirostris* in Finland, 8.
- Calystegia japonica*, *Anophia leucomelas* on, in Japan, 445.
- camelinus*, *Amblyteles*.
- Camellia oleifera*, weevil on, in Formosa, 340.
- cameroni*, *Spalangia*.
- Camnula pellucida*, in Canada, 476, 485; in U.S.A., 485; migrations of, 485; organisation of measures against, 476.
- Camphor Sassafras Base Oil, as an intermediary solvent for derris in oil sprays, 530.
- camphorae*, *Gammaphytoptus*.
- Camponotus herculeanus pennsylvanicus*, apparatus for protecting insect specimens from, in New York, 541.
- Camponotus laevigatus*, possibly in building timber in U.S.A., 499.
- Camponotus maculatus vicinus*, in building timber in U.S.A., 499.
- Campoplex convexus*, parasite of *Pristiphora wesmaeli* in Germany, 217.
- camposi*, *Chalcodermus*.
- Campsomeris annulata*, establishment of, against *Lachnosterna smithi* in Mauritius, 611.
- Campsomeris erythrogaster*, establishment of, against *Lachnosterna smithi* in Mauritius, 611.
- Campsomeris marginella modesta*, parasite of *Anomala orientalis* in Hawaii, 367.
- Campsomeris rodriguezensis*, establishment of, against *Lachnosterna smithi* in Mauritius, 611.
- Campylochaeta*, parasite of *Sphinx pinastri* in Poland, 677.
- Campylomma nicolasi*, possibly causing "crazy top" of cotton in Sudan, 574.
- Canada, cereal pests in, 176, 229, 295, 368; danger of introduction of *Agropyrum smithi* into, on account of *Cephus cinctus*, 368; forest pests in, 25, 53, 67, 176, 368, 369, 540, 647; orchard pests in, 39, 382, 542; pests of ornamental plants in, 592, 673; *Cydia nigricana* on peas in, 38, 39; *Leptocoris trivittatus* in, 374; grasshoppers and expenditure on their control in, 476, 477, 485; Aphids of maritime Provinces of, 104; annual insect population records in, 141; beneficial insects and biological control in, 38, 39, 67, 253, 369; regulations concerning transportation of nursery stock in, 176; beneficial insects introduced into U.S.A. from, 381; legislation restricting importation of potatoes into Britain from, 356; *Hercothrips fasciatus* on oranges imported into Japan from, 616. (See also under the various Provinces.)
- canaliculatus*, *Lyctus* (see *L. linearis*).
- Canary Islands, *Tephritis* in, 333.
- cancellatus*, *Carabus*.
- canella*, *Diatraea*.
- canescens*, *Alphus*; *Nemeritis*.
- canifrons*, *Ascogaster*.
- Cankerworm, Fall (see *Alsophila pometaria*).
- Cannabis sativa* (see Hemp).
- Cantharis livida*, in orchards in France, 623.
- Cantharis obscura*, food-plants and control of, in France, 622, 623.
- Cantharis rustica*, in orchards in France, 623.
- Cantheconidea acuta*, predacious on *Oreta carnea* in Sumatra, 386.
- Cantheconidea robusta*, parasites of, in Ceylon, 19.
- canus*, *Pheletes* (*Limonius*).
- Cape Gooseberry, False (see *Nicandra physaloides*).
- capensis*, *Enneadesmus forficula*.
- capitata*, *Ceratitis*.
- capitatum*, *Piesma*.
- capito*, *Locusta migratoria*.
- Capitophorus*, characters and scope of, 99, 100.
- Capitophorus fragariae*, and virus diseases of strawberry in Britain, 395; measures against, 395.
- Capitophorus korschelti*, sp. n., on Alpine and black currant in Germany, 100.
- Capitophorus ribis*, on currant and gooseberry in Britain, 333; *C. korschelti* recorded as, in Germany, 100.
- capreae*, *Cavariella*.

- Capsicum*, insects causing leaf-curl of, in Ceylon and India, **493, 494**; *Myzus persicae* transmitting virus disease to tobacco from, in Netherlands Indies, **493**; *Paratrioza cockerelli* on, in Texas, **651**; not attacked by *Phthorimaea operculella*, **289**.
capulifera, *Pimpla*.
Carabus auratus, measures against, on strawberry in Germany, **457**.
Carabus cancellatus, measures against, on strawberry in Germany, **457**.
Carabus pallipes (see *Agonum*).
Caragana, *Etiella zinckenella* on, in Russia, **152**.
Caraway, Aphids and virus disease of, in California, **590**.
Carbolic Acid, tests of repellents containing, against *Chrysobothris femorata*, **420**.
Carbolineum (see Tar Distillates).
Carbon Bisulphide, against borers in oil palms, **347, 348**; against Coleoptera in furniture, **181**; against pests of stored products, plant material, etc., **184, 230, 319, 341, 349, 358, 539, 667**; not affecting germination of coffee seed, **667**; against ants and termites, **25, 56, 287, 567, 693**; against other pests in soil, **11, 88, 177, 259, 358, 522, 583, 617, 621, 693**; in spray against *Parlatoria oleae*, **553**; emulsions of, **177, 259, 539, 553**; fire hazard of, **341, 358**; and carbon tetrachloride, **341**; and dichlorobenzenes, **88**; and naphthalene, **177**.
Carbon Dioxide, fumigants used with, **359, 542**.
Carbon Tetrachloride, and ethylene dichloride, as a fumigant, **120, 184, 341, 378, 539**; and carbon bisulphide, **341**; and toluene, as a solvent for dinitro-o-cyclohexylphenol, **261**.
Carcelia kockiana, parasite of *Argyroproctus illepidus* in Fiji, **213**.
Carcelia lucorum (see *Zenilia*).
carcharias, *Saperda*.
Cardamom (see *Elettaria cardamomum*).
cardinalis, *Dysdercus*; *Rodolia* (*Novius*).
Cardiophorus formosanus, soil characters in relation to, in sugar-cane fields in Formosa, **206**.
cardui, *Vanessa* (*Pyrameis*).
carduorum, *Apion* (*Ceratapion*).
Carica papaya (See Papaya).
carinatus, *Cheilonureus*; *Eriophyes*.
Carnation, *Tortrix pronubana* imported into Germany with cuttings of, **218**; pests of, in U.S.A., **79, 525**; *Tetranychus telarius* disseminating rust fungus on, **79**; insecticides causing injury to, **272, 526**.
carnea, *Oreta*.
Carolina, North, miscellaneous pests in, **377, 380, 599**; tobacco pests in, **254, 380**; *Typophorus viridicyaneus* on sweet potato in, **285**; beneficial insects and biological control in, **599**.
Carolina, South, *Epilachna varivestis* on beans in, **69**; *Heliothis armigera* in, **179, 180**; *Horistonotus uhleri* in, **500**; miscellaneous pests in, **379, 380**; beneficial insects, etc., in, **500, 501, 538**.
carolina, *Dissosteira*.
Carolinaia setariae, vector of sugar-cane mosaic in Florida, **658**.
Carpenter Ants (see *Camponotus*).
Carpenter Bees (see *Xylcopa*).
carpini, *Trypoxypus* (*Priobium*).
Carpocapsa (see *Cydia*).
carpocapsae, *Ascogaster*; *Hemiteles*.
Carpocoris, bionomics and ecology of, on cereals in Germany, **353, 631, 632**; measures against, **353**.
Carpocoris pudicus, parasites of, on cereals in Germany, **632**.
Carpocoris pudicus fuscispinus, parasites of, on cereals in Germany, **64, 632**.
Carpomyia incompleta, intercepted in fruits of *Zizyphus* in Russian Union, **439**.
Carpomyia pardalina (see *Myiopardalis*).
Carpomyia schineri, intercepted in fruits of *Zizyphus* in Russian Union, **439**.
Carpomyia vesuviana, on *Zizyphus jujuba* in India, **503**; intercepted in fruits of *Zizyphus* in Russian Union, **439**.
Carpophilus, measures against, in oil-palm kernels in Dahomey, **349**.
Carpophilus hemipterus (in dried fruit), habits of, in France and Germany, **167, 201**.
Carpophilus humeralis, attacking seed sugar-cane in Hawaii, **367**.
Carposina adreptella, new parasite of, on raspberry and blackberry in New Zealand, **37**.
carposinae, *Apanteles*.

- Carrot, pests of, in Britain, **96** ;
Psila rosae on, in Czechoslovakia, **468** ;
Forficula auricularia feeding on, in Ontario, **601** ;
Loxostege sticticalis on, in Siberia, **313** ;
 Aphids on, in Tasmania, **21** ;
 pests of, in U.S.A., **376, 496, 590** ;
 Aphids and virus disease of, **590**.
 Carrot Beetle (see *Ligyris gibbosus*).
 Carrot Rust Fly (see *Psila rosae*).
Carum carvi (see Caraway).
caryae, *Acrobasis*.
caryana, *Enarmonia*.
casei, *Piophilis*.
 Cashew (see *Anacardium occidentale*).
Casmara patrona, measures against, on tea in Formosa, **340**.
 Cassava, new mite on, in Brazil, **290** ;
Coscineuta virens on, in Trinidad, **25** ; locusts damaging, **571** ; insects and virus diseases of, **94, 95, 153**.
 Cassava, Sweet (see *Manihot dulcis* var. *aipi*).
Cassia, *Mictis profana* on, in Fiji, **641** ;
Xyleutes persona on, in Burma, **693**.
Cassida vittata, bionomics and control of, on beet in Morocco, **283, 284**.
Castanea sativa (see Chestnut).
castanea, *Diparopsis*.
castaneum, *Tribolium*.
 Castor, *Tetranychus telarius* on, in India, **127** ; susceptibility of, to dichloroethyl ether, **272**.
Casuarina, Coccids on, in Porto Rico, **434**.
Catabomba pyrastris (see *Lasiophthicus*).
Cataglyphis bicolor, *Microbracon greeni* reared on, in India, **129**.
Catalpa, Sphingids on, in U.S.A., **252, 655**.
catalpae, *Ceratonia*.
Catascopus facialis, introduced into Samoa against *Oryctes rhinoceros*, **641**.
Cathartus, measures against, in oil-palm kernels in Dahomey, **349**.
Cathartus advena (see *Ahasverus*).
Catocala oberthuri, on poplars and willows in Morocco, **196**.
Catorama herbarium, parasite of, infesting books in Fiji, **366** ; previously recorded as *Sitodrepa panicea*, **366**.
Catoxantha (see *Chrysoschora*).
catoxantha, *Artona*.
caucasicus, *Otiorrhynchus* ; *Phenacoccus*.
caudata, *Lepidota*.
 Cauliflower, pests of, in Britain, **96, 116** ;
Contarinia nasturtii on, in Czechoslovakia, **468** ;
Cidaria fluctuata on, in Denmark, **117** ;
 pests of, in France, **167, 458, 459, 621** ;
Contarinia nasturtii on, in Holland, **514** ;
Hylemyia brassicae on, in Russia, **317** ;
 pests of, in U.S.A., **72, 541** ;
 types of injury to, by *C. nasturtii*, **167** ;
 susceptibility of varieties of, to *Rhytidoderes plicatus*, **459** ;
 danger of injury to, by mercury bichloride, **116**.
cantella, *Ephestia*.
Cavariella aegopodii, on carrot and parsnip in Tasmania, **21**.
Cavariella capreae, transmitting virus disease of celery in California, **590** ; on carrot and parsnip in Tasmania, **21**.
cavus, *Dibrachys*.
 Cecidomyiids, list of, attacking apple and pear, **557** ; studies on food-plant range of, **672**.
Cecropia adenopus, *Monalonion knighti* on, in Brazil, **566**.
 Cedar (*Cedrus*), pests of, in N. Africa, **58, 226**.
Cedrela toona, *Hypsipyla robusta* on, in India, **612** ;
Xylocopa latipes in timber of, **337**.
cedri, *Phloeosinus*.
Cedria paradoxa, liberation of, against *Margaronia pyloalis* and *Hapalia machaeralis* in India and Burma, **612, 693**.
Cedrus (see Cedar).
Celastrus angulatus, preparation of insecticide from, **450, 451**.
 Celery, Aphids and virus disease of, in California, **590**.
Celerio lineata, outbreak of, in California, **239** ; trap-ditches against, **239**.
celerio, *Hippotion*.
 Celery, Aphids on, in U.S.A., **541, 590** ;
 list of other Aphids on, **590** ;
 virus diseases of, **590, 591**.
 Celite, dust mixture containing, **75**.
Cemiostoma scitella (see *Leucoptera*).
Centaurea, relation of *Doclostaurus maroccanus* to, in Transcaucasia, **321**.
Centeterus (parasite of *Pyrausta nubilalis*), bionomics of, in Italy, **174**.
Cephaleia sachalinensis, on pine in Japan, **339**.

- Cephalobus*, parasite of *Diplosis mori* in Korea, 338.
- Cephalobus persegnis*, parasite of *Horistonotus uhleri* in S. Carolina, 500.
- cephalonica*, *Corcyra*.
- Cephalosporium lecanii*, methods of utilising, against *Ceroplastes sinensis* in Russian Union, 308.
- cephalotes*, *Atta*.
- Cephus cinctus*, on wheat in Canada, 176, 368, 600; thelyotokous parthenogenesis in, 176; danger of introduction of *Agropyrum smithi* into wheat areas on account of, 368.
- Cephus pygmaeus* (on cereals), in Czechoslovakia, 468; in Denmark, 117; in Russian Union, 680; cytology of strains of, in Europe and Canada, 176.
- Ceracris kiangsu*, outbreaks and distribution of, in China, 451, 477; measures against, 477.
- ceramicus*, *Xyleutes*.
- Ceraphron manilae*, parasite of *Fornicia* in Java, 347.
- cerasi*, *Myzus*; *Rhagoletis*.
- cerasi*, auct., *Caliroa* (see *C. lima-cina*).
- Ceratapion* (see *Apion*).
- Ceratia coffeae*, on cucurbits in Fiji, 641.
- Ceratia quadrimaculata*, on cucurbits in Fiji, 641.
- Ceratia similis*, repellent against, on cucurbits in Formosa, 618.
- Ceratitis capitata*, in S. Africa, 330; utilisation of *Tetrastichus giffardi* against, in Brazil, 34; in Cyprus, 270; bionomics of, in France, 195; in Italy, 98; in Queensland, 346; intercepted in Russian Union, 439; not found in Trinidad, 24; legislation against importation of, into U.S.A. from Hawaii, 344; climatic conditions unfavourable to, in Florida, 327; reported in Venezuela, 24; on *Citrus*, 270, 330, 439; on coffee, 34; other host-fruits of, 195, 439; experiment on oviposition of, 346; reproductive organs of, 512; measures against, 98, 270, 330, 344.
- Ceratitis rosa*, measures against, on orange in S. Africa, 330.
- Ceratomegilla fuscilabris*, predacious on *Anuraphis roseus* in Connecticut, 428.
- Ceratomia catalpae*, in U.S.A., 253, 421, 655; parasite and hyper-parasite of, 253, 655, 656; toxicity of basic copper arsenate to, 421.
- ceratoniae*, *Myelois*.
- Ceratostomella ulmi* (see *Ophiostoma*).
- Ceratovacuna lanigera* (see *Oregma*).
- cercerisella*, *Gelechia*.
- Cercis canadensis*, pests of, in Kansas, 376.
- Cerconota anonella*, on *Anona squamosa*, etc., in Brazil, 566.
- cerealella*, *Sitotroga*.
- cerealium*, *Limothrips*.
- Cereals, grasshopper damaging, in Argentina, 214; pests of, in Britain, 96, 332; pests of, in Germany, 352, 353, 519, 631, 632; locust damaging, in India, 291; grasshopper damaging, in Korea, 557; *Laphygma exempta* on, in Nyasaland, 126; pests of, in Poland, 403, 676; pests of, in Russian Union, 679, 680; *Thysanoptera* on, in Sweden, 121; *Oscinella* spp. on, in Switzerland, 270; pests of, in U.S.A., 32, 67, 284, 287; cut-worms on, in Victoria, 389; type of injury to, by bugs, 352, 353, 548, 554; insects and other factors associated with white ear disease in, 121, 680; question of survival of grain mites in fields of, 312, 318. (See Maize, Wheat, etc.)
- Cereals (Stored), pests of, and their control, 8, 24, 118-120, 137, 162, 172, 173, 196, 199, 220, 248, 265, 305, 312, 318, 319, 339, 341, 350, 355, 360, 378, 551, 552, 582, 585, 600, 667, 685; chloropicrin reducing germination of, 319.
- Ceresa bubalus* (on fruit trees), in France, 390, 689; in Jugoslavia, 474; in Switzerland, 169, 438; in U.S.A., 689; bionomics of, 169, 390, 689; measures against, 690.
- Cerodontha denticornis* (on cereals), in Japan, 208; in New Zealand, 547, 548.
- Ceromasia sphenophori*, parasite of *Rhabdocnemis obscura* in Hawaii, 90, 367.
- cerophaga*, *Angitia*.
- ceroplastae*, *Aneristus*.
- Ceroplastes*, new Encyrtid parasites of, in Africa, 503; on coffee in Kenya, 503.

- Ceroplastes africanus*, new Encyrtid hyperparasite of, in Sudan, 40.
- Ceroplastes itaiyensis*, sp. n., in Brazil, 48.
- Ceroplastes sinensis*, on *Citrus* in Russian Union, 150, 308; experiments with *Cephalosporium lecanii* against, 308; other measures against, 150.
- Cerosipha forbesi*, bionomics of, on strawberry in Ontario, 276.
- Cerura bifida*, on poplar and willow in Morocco, 196.
- cerurae*, *Microplitis*.
- cervicalis*, *Zelus*.
- cervinus*, *Dascillus*.
- Ceuthorrhynchus macula-alba* (Poppy Weevil), in Czechoslovakia, 468, 469, 470; bionomics of, 469; measures against, 470.
- Ceuthorrhynchus pleurostigma*, on cauliflower in France, 459.
- Ceuthorrhynchus punctiger*, bionomics and control of, on *Taraxacum kok-saghyz* in Kazakhstan, 45.
- Ceylon, leaf-curl and pests of *Capsicum frutescens* in, 493, 494; *Nephantis serinopa* on coconut in, 638; catalogue of Longicorns in forests in, 612; pests of stored cacao in, 638; *Homona coffearia* on tea in, 19; beneficial insects and biological control in, 19, 638; summary of plant quarantines in, 592; natural enemies of *Pseudococcus* introduced into Kenya from, 665.
- Chaetexorista javana*, parasite of *Setora nitens* in Java, 347.
- Chaetocnema*, on ramie in Transcaucasia, 587.
- Chaetocnema aridula*, on wheat in Central Asia, 453.
- Chaetocnema concinna*, on beet in Britain, 674.
- Chaetocnema cylindrica*, on rice in Japan, 556.
- Chaetococcus bambusae*, on bamboo in Porto Rico, 501.
- Chaetodacus* (see *Dacus*).
- Chaetophorus hickeliana*, in Italy, 512.
- Chaetoptelius vestitus* (see *Hylesinus*). *chalcedonia*, *Elaphria*.
- Chalcidoids, list of, in Germany, 352.
- chalcites*, *Plusia* (*Phytometra*); *Pterostichus* (*Poecilus*).
- chalcodermi*, *Urosigalphus*.
- Chalcodermus aeneus* (Cowpea Curculio), bionomics of, in U.S.A., 76, 82, 644; measures against, 82.
- Chalcodermus bondari*, bionomics and control of, on cotton, etc., in Brazil and Argentina, 413, 414.
- Chalcodermus camposi*, sp. n., on cacao in Brazil, 566.
- Chalcodermus marshalli*, on cacao in Brazil, 566.
- Chalk, as carrier for dusts, 313, 367.
- Charaeas graminis*, natural enemies of, on grasses in Scotland, 122.
- Cheese, *Necrobia* spp. in, 584.
- Cheese Skipper (see *Piophilha casei*).
- Cheiloneurus*, African species of, 40, 503.
- Cheiloneurus angustifrons*, sp. n., probably hyperparasite of *Ceroplastes africanus* in Sudan, 40.
- Cheiloneurus carinatus*, sp. n., hosts and distribution of, in Africa, 40.
- Cheiloneurus chiaromonte*, doubtfully distinct from *C. cyanonotus*, 40.
- Cheiloneurus cyanonotus*, distribution and hosts of, in Africa, 40; *C. chiaromonte* doubtfully distinct from, 40.
- Cheiloneurus latiscapus*, sp. n., reared from mealybugs parasitised by *Anagyrus* in Natal, 40.
- Cheiloneurus orbitalis*, sp. n., hosts of, in Natal, 40.
- Cheimatobia brumata* (see *Operophtera*).
- Cheiranthus*, *Aleurodes brassicae* on, in Britain, 61.
- Cheiropachus*, key to N. American species of, 434.
- Chelonus*, parasite of *Pyrausta aurata meridionalis* in Morocco, 193.
- Chelonus annulipes*, in Canada, 381; introduced into Porto Rico against *Diatraea saccharalis*, 382; hosts and utilisation of, in U.S.A., 80, 381, 382, 656; relation of host physiology to development of, 80.
- Chelonus pectinophorae*, introduced into U.S.A. from Korea against *Platyedra gossypiella*, 381.
- Chermes abietis*, measures against, on spruce in New York, 529; characters of, 91.
- Chermes boerner*, recorded as *C. pini* on pines in Australia, 262, 546; restricted to *Pinus radiata* in U.S.A., 546; question of biological control of, 262, 546.
- Chermes ishiharai*, on *Picea* spp. in Japan, 91; characters of, 91.

- Chermes japonicus*, on *Picea* spp. in Japan and Sakhalin, **91**; characters of, **91**.
- Chermes karafutonis*, sp. n., on *Picea jezoensis* in Sakhalin, **91**.
- Chermes nordmannianae* (on *Abies*), in Czechoslovakia, **469**; in Germany, **48**; increase of, in Switzerland, **517**; measures against, **48**, **517**.
- Chermes nüsslini* (see *C. nordmannianae*).
- Chermes piceae*, on *Abies grandis* in U.S.A., **499**.
- Chermes pini* (on pines), *C. boernerii* recorded as, in Australia, **262**, **546**; predacious enemies of, in Britain, **262**, **263**.
- Chermes strobis*, predacious enemies of, on pines in Britain, **262**, **263**.
- Chermes strobilobius*, on *Larix decidua* in Czechoslovakia, **469**.
- Chermes tsugae*, on *Tsuga heterophylla* in U.S.A., **499**.
- Chermes viridis*, on *Larix decidua* in Czechoslovakia, **469**.
- Cherry, pests of, in Australia, **20**, **21**, **279**; *Argyresthia ephippella* on, in Austria, **232**; *Myzus cerasi* on, in Britain, **333**; *Illiberis pruni* on, in China, **668**; *Phalera flavesens* on, in Formosa, **206**; pests of, in France, **622**, **689**; pests of, in Germany, **114**, **155**, **156**, **297**, **513**; Aphids on, in Hungary, **458**; *Malacosoma indica* on, in India, **577**; pests of, in Japan, **211**, **338**, **361**, **620**; *Monosteira unicastata* on, in Morocco, **359**; pests of, in U.S.A., **429**, **498**, **535**, **643**; Coccids on, in Uzbekistan, **474**; *Rhagoletis cerasi* not attracted by extracts of, **297**; *R. cerasi* intercepted in fruit of, in Russian Union, **439**.
- Cherry Case-bearer (see *Coleophora pruniella*).
- Cherry Fruit-fly (see *Rhagoletis cerasi*).
- chersis, *Sphinx*.
- Chervil, Curled (see *Anthriscus cerefolium*).
- Chestnut, pests of, in France, **358**; pests of, in Greece, **452**; pests of, in Italy, **358**; *Lachnus tropicalis* on, in Japan, **615**; *Dryocoetes minor* on, in Turkey, **522**; treatment of nuts of, against pests, **358**, **359**.
- Cheyletus eruditus*, predacious on *Tyroglyphus farinae* in Russian Union, **319**.
- chiaromonte*, *Cheiloneurus*.
- Chickweed (see *Stellaria media*).
- Chile, sawfly introduced into New Zealand from, against *Acaena*, **449**.
- Chillies (see *Capsicum*).
- Chilo infuscatellus*, on sugar-cane in Formosa, **206**, **339**, **363**, **447**; dispersal of larvae of, **339**; relation of growth of sugar-cane to oviposition by, **206**; natural enemies and biological control of, **363**, **364**, **447**.
- Chilo simplex* (on rice), in China, **613**; in Hawaii, **367**; in Japan, **209**, **338**, **441**, **442**, **619**, **620**; in Manchuria, **340**; other food-plants of, **340**; parasites and biological control of, **367**, **442**, **619**, **620**; flooding reducing infestation of rice by, **209**; measures against, **209**, **441**, **613**; tests of insecticides on, **18**, **338**, **620**.
- Chilo trypetes*, sp. n., on sugar-cane in Punjab, **456**.
- Chilo zonellus*, effect of, on sugar-cane varieties in India, **558**.
- Chilocorus*, predacious on Coccids in Dahomey, **349**.
- Chilocorus bipustulatus* (predacious on Coccids), in Cyprus, **270**; in Russian Union, **304**, **316**; bionomics and utilisation of, **304**.
- Chilocorus distigma*, establishment of, against Coccids in Seychelles, **335**.
- Chilocorus politus*, utilisation of, against Coccids in Mauritius, **611**.
- Chilocorus renipustulatus*, predacious on *Aspidiotus perniciosus* in Russian Union, **316**.
- Chilocorus renipustulatus* ab. *inornatus*, introduced into Caucasus from Russian Far East against *Aspidiotus perniciosus*, **303**; bionomics of, **303**, **304**.
- Chilocorus schioedtei*, predacious on Coccids in Dahomey, **349**.
- Chilocorus wahlbergi*, establishment of, against Coccids in Seychelles, **335**.
- chilonis*, *Amydroma* (see *Microbracon chinensis*).
- China, *Buzura suppressaria* on *Aleurites* in, **614**; forest pests in, **360**, **449**, **451**; *Diacrisia obliqua* on lima beans in, **129**; miscellaneous pests in, **450**, **451**;

- orchard pests in, **450, 667-669** ; rice pests in, **451, 613** ; new Aphids in, **336** ; new Coccid in, **48** ; locusts and grasshoppers in, **450, 451, 477, 486** ; beneficial insects in, **669** ; *Eupristina verticillata* introduced into Hawaii from, to pollinate *Ficus retusa*, **367** ; Coccid on orchids imported into Japan from, **617**.
- Chinch Bug (see *Blissus leucopterus*).
- chinensis*, *Aspidiotus* ; *Bruchus* (*Callosobruchus*) ; *Melaphis* ; *Microbracon* ; *Oxya*.
- Chinese Banyan (see *Ficus retusa*).
- Chinese Oak Silkworm (see *Antheraea pernyi*).
- Chionaspis asiatica*, on fruit trees in Uzbekistan, **474**.
- Chionaspis pinifoliae*, measures against, on pines in New York, **529, 530**.
- Chionaspis tegalensis*, Coccinellid predacious on, on sugar-cane in Mauritius, **611**.
- Chirida signifera*, measures against, on sweet potato in Jamaica, **239**.
- Chirothrips hamatus*, on *Alopecurus* in Finland, **160** ; on wheat in Sweden, **121**.
- Chirothrips manicatus*, on wheat in Sweden, **121**.
- chittendeni*, *Dialeurodes*.
- Chlorida festiva*, on egg-plant in Jamaica, **239**.
- Chloridea* (see *Heliothis*).
- Chloris*, relation of *Nomadacris septemfasciata* to, in Tanganyika, **387, 388**.
- chloris*, *Aethemenes* (*Nezara*) ; *Aphis*.
- Chlorita* (see *Empoasca*).
- Chloroacetamide, tests of, in baits for grasshoppers, **537**.
- Chlorochroa sayi*, and boll rots in cotton in Arizona, **416, 417** ; measures against, **417**.
- Chlorocresylic Acid, as repellent for *Hylemyia brassicae*, **116**.
- Chlorocryptus*, parasite of *Setora nitens* in Java, **347**.
- Chloropicrin, ineffective against ants, **44** ; as a soil fumigant, **44, 617, 622** ; against pests of stored products, **225, 319, 338, 349, 378, 451** ; causing injury to *Citrus*, **617** ; reducing germination of grain, **319** ; azaleas killed by emulsion of, **605** ; effect of addition of, to insecticidal dusts, **470, 471**.
- Chloropisca notata*, bionomics and control of, on cereals in Japan, **556**.
- Chlorops circumdata* (see *Chloropisca notata*).
- Chlorops oryzae*, on rice in Japan, **207, 555, 620** ; bionomics of, **207** ; measures against, **555**.
- Chlorops taeniopus* (on cereals), in Britain, **332, 562** ; in Czechoslovakia, **468** ; parasites of, **562**.
- choaspes*, *Microphanurus*.
- Chondacris rosea*, measures against, in China, **477**.
- Chopardina importata* (see *Dolichopoda bormansi*).
- Chorthippus albomarginatus*, in Russian Union, **320, 386** ; ecology of, **386**.
- Chorthippus apricarius*, in Poland, **9** ; ecology of, in Russia, **386**.
- Chorthippus biguttulus*, ecology of, in Russia, **386**.
- Chortoicetes terminifera*, in Australia, **56, 130, 345, 476, 545, 602** ; bionomics of, **345, 545** ; *Trichopsidea oestracea* parasitic on, **56** ; measures against, **130, 476, 602**.
- Chortophila*, doubtful identity of, **113, 114**. (See *Hylemyia*.)
- chosensis*, *Hemiteles*.
- Chromaphis nirecola*, on elms in Japan, **443**.
- chromataria*, *Earias*.
- Chromatomyia ilicis* (see *Phytomyza*).
- Chromic Oxide, tests of, in baits for grasshoppers, **134**.
- Chromocryptus antipodialis*, parasite of *Cydia molesta* in Australia, **640** ; parasitised by *Dibrachys cavus*, **640**.
- Chrysanthemum*, pests of, in Britain, **333, 519, 673** ; restrictions on importation of, into Britain, **356** ; *Ceresa bubalus* on, in France, **689** ; pests of, in U.S.A., **141, 142, 673** ; identity and distribution of gall-midges on species of, **673**. (See *Pyrethrum* Plants.)
- Chrysanthemum* Gall-midge (see *Diarthronomyia*).
- Chrysobothris femorata*, on apple, etc., in U.S.A., **178, 420**.
- Chrysobothris igniventris*, bionomics of, on pines in Turkey, **219**.
- chrysocephala*, *Psylliodes*.
- Chrysocharis gemma*, parasite of *Phytomyza ilicis* in Britain, **669**.
- Chrysocharis syma*, parasite of *Phytomyza ilicis* in Britain, **669** ; parasite of, **670**.

- Chrysoschroa*, infesting Finnish plywood in India, 465.
- Chrysocoris javanus* (*atricapillus*), new parasite of, in Java, 19.
- Chrysolina* (see *Chrysomela*).
- Chrysomela brunsvicensis*, factors preventing establishment of, against *Hypericum* in Australia, 282.
- Chrysomela fastuosa*, tests of action of HCN on, 309.
- Chrysomela geminata*, introduced into Australia against *Hypericum*, 546.
- Chrysomela hyperici*, factors preventing establishment of, against *Hypericum* in Australia, 282.
- Chrysomela tremulae* (see *Melasoma*).
- Chrysomela varians*, factors preventing establishment of, against *Hypericum* in Australia, 282.
- chrysomphali*, *Aphytis*.
- Chrysomphalus aonidium*, auct. (see *C. ficus*).
- Chrysomphalus aurantii* (see *Aonidiella*).
- Chrysomphalus dictyospermi*, measures against, on *Citrus* in Argentina and Transcaucasia, 23, 150.
- Chrysomphalus ficus* (on *Citrus*), in Argentina, 23; in Egypt, 509; in Florida, 256, 257, 259; on *Elaeagnus pungens* in Japan, 91; on coconut in Philippines, 451; other food-plants of, 259, 509; peaks of reproductive activity of, 256; measures against, 23, 256, 509; effect of spray residues on populations of, 257; tests of thiocyanate and oil against, 259.
- Chrysomphalus obscurus*, measures against, on pecan in Louisiana, 255.
- Chrysomphalus personatus*, measures against, on *Ficus* in Egypt, 509; on banana in Haiti, 289.
- Chrysomphalus pinnulifer* var. *diversicolor*, on orange in S. Rhodesia, 15.
- Chrysomphalus rossi*, measures against, on *Citrus* in New Zealand, 523, 524.
- Chrysopa*, predacious on *Erannis* spp. in Poland, 438; predacious on other insects in Russian Union, 215, 453; suitability of, as host for *Trichogramma evanescens*, 36.
- Chrysopa oculata separata* (predacious on *Macrosiphum onobrychidis*), bionomics of, in Utah, 30.
- Chrysophyllum cainito*, *Dacus passiflorae* on, in Fiji, 366.
- chrysorrhoea*, L., *Arctornis*.
- chrysorrhoea*, auct., *Euproctis* (*Liparis*) (see *Nygma phaeorrhoea*).
- Cicadella viridis*, on beet in China, 451; measures against, on fruit trees, etc., in Germany, 398; doubtful vector of disease of sugar sorghum in Italy, 472.
- Cicadula sexnotata* (see *Macrosteles*).
- Cicer arietinum*, *Heliothis armigera* on, in S. Rhodesia, 492.
- Cidaria bilineata*, suitability of, as host for *Trichogramma evanescens*, 35.
- Cidaria fluctuata*, on cauliflower in Denmark, 117.
- Cider, affected by arsenic spray residues on apples, 273.
- Cienfuegosia hildebrandti*, *Diparopsis castanea* on, in S. Africa, 488, 489; not a food-plant of *Dysdercus fasciatus*, 489.
- Cigarette Beetle (see *Lasioderma serricorne*).
- ciliatus*, *Dacus*.
- cilicrura*, *Hylemyia* (*Chortophila*).
- Cimex*, suitability of, as host for *Trichogramma evanescens*, 36.
- Cinara hattorii*, sp. n., on *Abies sachalinensis* in Japan, 339.
- cincticeps*, *Nephotettix bipunctatus*.
- cinctipes*, *Lasiosina*.
- cinctus*, *Cephus*.
- cinerascens*, *Cnephala* (*Gonia*).
- cinerea*, *Apriona*; *Zeuxia*.
- cingulata*, *Herse*.
- cingulatus*, *Dysdercus*.
- Cinnabar Moth (see *Tyria jacobaeae*).
- cinnamomeus*, *Aradus*.
- Cinnamomum camphora*, new Eriophyid on, in California, 288.
- Cinnamomum glanduliferum*, *Xylocopa latipes* in timber of, in India, 337.
- Cinnamon Oil, tests of, in baits for *Dacus oleae*, 98.
- circumdata*, *Chlorops* (see *Chloropsisca notata*).
- circumflexus*, *Myzus*.
- Cirphis latiuscula*, parasites of, on sugar-cane in Florida, 657.
- Cirphis loreyi*, parasites of, on sugar-cane in Queensland, 186.
- Cirphis unipuncta*, in Australia, 57, 294, 389; in Fiji, 213, 641; in Japan, 441; in Manchuria, 361; in U.S.A., 67, 599; on cereals and grasses, 67, 213, 361, 389, 599; on cotton and lucerne, 599; Tachinid parasites of, 57, 294;

- probably destroyed by *Bufo marinus*, **641**; measures against, **213, 390**; tests of oil baits for, **67**.
- cisti*, *Bruchus* (*Spermophagus*).
- cistipennis*, *Fundella*.
- Cistogaster globosa*, parasite of *Aelia acuminata* in Germany, **64**.
- citrana*, *Eulia* (*Argyrotaenia*).
- citri*, *Dialeurodes*; *Paratetranychus*; *Prays*; *Prontaspis*; *Pseudococcus*; *Scirtothrips*.
- citricola*, *Coccidophilus*.
- Citricola Scale (see *Coccus pseudomagnoliarum*).
- citriculus*, *Pseudococcus*.
- citrifolii*, *Dialeurodes*.
- citrina*, *Aonidiella*; *Gyranusa*.
- citrinus*, *Aspidiotiphagus*.
- Citrus*, locusts damaging, in Fr. W. Africa, **571**; pests of, in S. Africa, **323, 330**; pests of, in Argentina, **23, 238**; pests of, in Australia, **89, 278, 292, 330, 565, 603**; pests of, in Cyprus, **270**; Coccids on, in Egypt, **507, 508, 509**; *Mictis profana* on, in Fiji, **641**; *Pulvinaria polygonata* on, in Formosa, **557**; *Pseudococcus citri* on, in France, **266**; pests of, in India, **128, 503**; pests of, in Japan, **207, 440, 441, 616, 617**; pests of, in New Zealand, **21, 56, 277, 278, 523, 524**; Coccids on, in Peru, **165, 511**; pests of, in Philippines, **452**; pests of, in S. Rhodesia, **14, 15, 16**; Coccids on, in Russian Union, **148, 149, 150, 308, 454**; *Dacus* on, in Samoa, **365**; adaptation of Geometrid to, in Sicily, **630**; fruit-piercing moths damaging, in Sierra Leone, **271**; Aphids and Coccids on, in Spain, **6**; pests of, in U.S.A., **55, 256, 257, 258, 259, 261, 342, 343, 377, 424, 425, 432-434, 459-461, 642, 649, 650, 653**; pests of, in W. Indies, **24, 25, 181, 239**; illustrations of pests of, **617**; effect of spray residues on populations of Coccids on, **257**; insects intercepted on fruit and seedlings of, in Japan and Russia, **50, 439, 616**; insecticides causing injury to, **15, 150, 425, 433, 460, 508, 649, 650, 653**; tests of reactions of sprays used on, **278**; effects of lead arsenate and copper carbonate on fruit of, **330, 331**.
- Citrus Aphis* (see *Aphis spiraeicola*).
- Citrus Borer* (see *Oemona hirta*).
- Citrus Gall Wasp* (see *Eurytoma fellis*).
- Citrus Red Mite* (see *Paratetranychus citri*).
- Citrus Red Scale* (see *Aonidiella aurantii*).
- Citrus Thrips* (see *Scirtothrips citri*).
- Citrus Whitefly* (see *Dialeurodes citri*).
- Cladosporium*, infesting *Asterolecanium bambusae* in Porto Rico, **501**.
- claripalpis*, *Theresia* (*Paratheresia*).
- claripennis*, *Coccidoxenus*.
- Clastocnemis quadrimaculata* (see *Platygenia*).
- clavatus*, *Prochiloneurus*.
- Clays, as carriers for dusts, **32, 150, 177, 249, 250, 310, 371, 380**; spray formula containing, **532**; mercury compounds mixed with, for treating seed against *Psila rosae*, **497**.
- cleantes*, *Rhaconotus*.
- Clensel, in baits for Trypetids, **98, 270**.
- Cleonus mendicus*, survey of data on, on beet in Italy, **301**.
- Cleonus piger*, bionomics and control of, on artichoke in Italy, **473**.
- Cleonus punctiventris* (on beet), in Czechoslovakia, **470**; in Russia, **306, 407, 678, 684**; birds destroying, **470**; emergence and migration of, **678**; experiments with fungi against, **306, 307, 470, 684**; other measures against, **407, 470, 678**.
- Clidemia*, attempted introduction of *Liothrips urichi* into Solomon Is. against, **366**.
- Clinodiplosis equestris* (see *Haplodiplosis*).
- Clisiocampa* (see *Malacosoma*).
- clisiocampae*, *Ablerus*; *Dibrachys* (see *D. cavus*); *Oöencyrtus*; *Telenomus*.
- Clistomorpha brasiliensis*, parasite of *Dysdercus* in Brazil, **22**.
- Closterocerus trifasciatus*, parasite of *Phytomyza ilicis* in Britain, **669**.
- Clothes Moths, tests of moth-proofing preparations and fumigants against, **140, 635**.
- Clove Tree, pests of, in Netherlands Indies, **227**.
- Clover, pests of, in W. Australia, **131, 292**; *Apion apricans* on, in Czechoslovakia, **470**; pests of, in Germany, **519, 686**; *Collembola* on, in New Zealand, **550, 551**; *Estigmene acraea* on, in

- Oklahoma, **341**; pests of, in Russian Union, **322, 568, 679, 681, 682**; *Apion* spp. on, in Sweden, **117**; susceptibility of varieties of, to *Apion* spp., **118**; *Aphis fabae* transmitting virus disease of, **686**.
- Clover, Alsike (see *Trifolium hybridum*).
- Clover, Subterranean (see *Trifolium subterraneum*).
- Clover Weevils (see *Apion aestivum*, *A. apricans* and *A. flavipes*).
- clypeata*, *Lachnosterna* (*Phyllophaga*).
- Clysia ambiguella* (Vine Moth), in France, **155**; in Germany, **102, 111, 458, 465, 496, 582, 689**; in Russian Union, **403**; bionomics of, **111, 466, 496**; breeding of, for testing insecticides, **111**; timing of sprays against, **155**; sprays against pupae of, **103, 689**; baits for, **465, 496, 582**; banding against, **458**; use of females for trapping males of, **466, 582**.
- Cnaphalocrocis medinalis*, on rice and grasses in Philippines, **364, 451**.
- Cnaphalodes* (see *Chermes*).
- Cneorhinus plagiatus*, on beet and crucifers in Denmark, **117**.
- Cnephalia cinerascens*, parasite of *Spodoptera mauritia* in Formosa, **363**.
- Cnephasia longana*, on strawberry in Oregon, **498**.
- Cnidocampa flavescens* (see *Monema*).
- Coal, Brown, compared with bentonites for use in nicotine sprays, **545**.
- Coal-tar Creosote (see Tar Distillates).
- Cóbana Negra (see *Stahlia*).
- Coca (see *Erythroxylon coca*).
- coccidivorus*, *Anagyrus*.
- Coccidophilus citricola*, predacious on *Protargionia larreae* in Argentina, **24**.
- Coccidoxenus claripennis*, sp. n., parasite of *Inglisia conchiformis* in Uganda, **40**.
- coccinellae*, *Perilitus*; *Tetrastichus*.
- Coccinia indica*, *Dacus* spp. on, in Madras, **561, 562**.
- Coccoloba ilheense*, new Lamiid on, in Brazil, **290**.
- Coccomytilus zlocistii* (see *Lepidosaphes*).
- Coccophagoides similis*, parasite of *Targionia vitis* in Italy, **471**.
- Coccophagus gurneyi*, causes of immunity of certain mealybugs from, **598**.
- Coccophagus lycimnia* (*lecanii*), parasite of *Aonidiella citrina* in Transcaucasia, **149**.
- Cocculus trilobus*, *Calpe emarginata* on, in Japan, **209**.
- Coccus hesperidum*, in Argentina, **23**; in Natal, **503**; in S. Rhodesia, **15**; parasites of, **15, 503**; measures against, on *Citrus*, **15, 23**.
- Coccus longulus*, measures against, on *Anona* in Egypt, **509**.
- Coccus pseudomagnoliarum*, measures against, on *Citrus* in California, **343, 433, 649**; measures against, **433, 649**; resistance of strains of, to HCN, **343**.
- Coccus viridis*, on limes in Grenada, **25**; Scoliid feeding on honeydew of, on guava in Haiti, **84**.
- Cochineal Insect (see *Dactylopius*).
- cochleariae*, *Phaedon*.
- cockerelli*, *Paratrioza*.
- Cockroaches, destroyed by *Bufo marinus* in Fiji, **641**; sodium fluoride dust against, in Hawaii, **367**; toxicity of *Bacillus cereus* to, **81**; temperature and humidity relations of, **224**.
- Coconut, *Rhynchophorus palmarum* on, in Brazil, **22**; *Nephantis serinopa* on, in Ceylon, **638**; pests of, in Fiji, **22, 212, 213, 366**; *Brassolis sophorae* on, in Br. Guiana, **524**; pests of, in Hawaii, **367**; new thrips intercepted on, in Japan, **50**; pests of, in Mauritius, **611**; pests of, in New Guinea Territory, **22, 277, 294, 366**; *Promecotheca opacicollis* on, in New Hebrides, **366**; pests of, in Philippines, **451**; *Oryctes rhinoceros* on, in Samoa, **641**; pests of, in Seychelles, **335**; *P. reichei* on, in Tonga, **366**; pests of, in W. Indies, **25, 239**; *Xyleborus perforans* in timber of, **181**.
- Coconut Caterpillar (see *Nephantis serinopa*).
- Coconut Leaf-roller (see *Lamprosema blackburni*).
- Coconut Oil (see Oil, Coconut).
- Coconut-oil Soap (see Soap, Coconut-oil).
- Cocos coronata*, pests of, in Brazil, **661**.
- Cocos nucifera* (see Coconut).

- Cocos vagans*, pests of, in Brazil, 661.
- Codionhispa anonicola*, on Anonaceae in Brazil, 567.
- Codling Moth (see *Cydia pomonella*).
- Coelinius niger*, parasite of Chloropids in Britain, 562.
- Coeloides*, parasite of *Pissodes* spp. in Finland, 8.
- Coeloides scolyticida*, parasite of Scolytids in Holland, 397.
- Coeloides stigmaticus*, parasite of *Pissodes pini* in Finland, 8.
- Coelonotus*, considered a synonym of *Aphidius*, 615.
- Coelonotus japonicus*, parasite of *Lachnus tropicalis* in Japan, 615.
- Coelophora inaequalis*, introduced into Porto Rico against *Sipha flava*, 382.
- Coelopisthia nematocida* (see *Tritoneptis klugi*).
- Coelopisthia scutellata* (see *Tritoneptis*).
- coenobita*, *Panthea*.
- coerulea*, *Phytoccia*; *Zicrona*.
- coerulescens*, *Oedipoda*; *Tetrastichus*.
- coeruleus*, *Corynetes*; *Rhynchites*.
- coffae*, *Cervatia* (*Aulacophora*); *Diarthrothrips*; *Lygus*; *Saissetia*; *Schizobremia*; *Zeuzera*.
- coffearia*, *Homona*.
- Coffee, *Stephanoderes hampei* not found on, in Italian E. Africa, 175; pests of, in Brazil, 34, 188, 238; *Zeuzera coffae* on, in India, 577; pests of, in Netherlands Indies, 161, 522; *Xylotrechus quadripes* on, in Indo-China, 49; pests of, in Kenya, 40, 503, 665, 666, 667; *Anthores leuconotus* on, in Nyasaland, 126; pests of, in Sierra Leone, 271; pests of, in Tanganyika, 40, 126; *S. hampei* on, in Uganda, 188; *Leucoptera coffeella* on, in W. Indies, 435; relation of *Xyleborus* and pruning to crop yield of, 522; *Aleurites montana* a suitable shade-tree for, 49; *Rhynchota* associated with *Nematospora* in, 389.
- Coffee (Stored), *Tribolium* spp. imported into Britain in, 666; treatment of, against *Stephanoderes hampei*, 667.
- Coffee Berry Borer (see *Stephanoderes hampei*).
- coffeella*, *Leucoptera*.
- cognatus*, *Poeciloscytus*.
- coimbatorensis*, *Dinarmus*.
- Colaphellus bowringi*, measures against, on vegetables in China, 450.
- Colaphellus hoefti*, on crucifers in Russian Union, 439.
- Colaspis hypochlora*, on bananas in Br. Guiana, 524.
- Colaspis trivialis*, measures against, on vines in Brazil, 34.
- Cold Storage, uses of, against insect pests, 120, 173, 344, 360, 361, 513; Aphids kept in, for rearing Coccinellids, 81; effect of, on reproduction of parasitic Hymenoptera, 144.
- Cold-hardiness, studies on, in insects, 37, 298, 404, 405, 406.
- Coleophora fuscadinella*, new parasite of, on elm and alder in Britain, 58.
- Coleophora hemerobiella*, on plum and apple in Czechoslovakia, 468.
- Coleophora pruniella*, parasites of, on apple and cherry in Oregon, 643.
- coleophorae*, *Apanteles*.
- Coleoptera, lists of: associated with cultivated fruits in Britain, 160; in potato storage cellars in Finland, 392.
- Coleus parviflora*, pests of, in Madras, 129.
- colibri*, *Athalia* (see *A. rosae*).
- Colletotrichum falcatum*, 656.
- collinus*, *Laevicephalus* (*Deltocephalus*).
- Collops quadrimaculatus*, predacious on *Blissus leucopterus* in Oklahoma, 261.
- Collyria calcitrator*, introduced into U.S.A. from Canada against *Trachelus tabidus*, 381.
- Coloborhombus fasciatipennis*, on clove trees in Netherlands Indies, 227.
- Colocasia*, *Papuana huebneri* on, in Gilbert Is., 366.
- Colombia, *Monalonion* on cacao in, 566; summary of plant quarantines in, 274.
- Colorado, Aphids in, 104, 542, 596; breeding areas of *Eutettix tenellus* in, 593, 594; forest pests in, 377; 528; *Paratrioxa* spp. on tomato and potato in, 72, 408, 422, 423; beneficial insects in, 528.
- Colorado Potato Beetle (see *Lep-tinotarsa decemlineata*).
- Colours, reactions of insects to, 7, 31, 442, 446.
- columbariella*, *Tinea*.

- communis*, *Lygus*; *Melanotus*; *Panorpa*.
comosa, *Eucelatoria*.
complanella, *Tischeria*.
compressiventris, *Apanteles*.
Compsilura concinnata, parasite of *Vanessa cardui* in Transcaucasia, **587**; establishment of, against *Stilpnotia salicis* in Washington, **499**.
Compsilura concinnata sumatrensis, parasite of *Cirphis loreyi* in Queensland, **186**.
comptana, *Ancyli*.
Comstockiella perniciosa (see *Aspidiotus*).
conchiformis, *Inglisia*.
concinna, *Chaetocnema*.
concinna, *Compsilura*.
concinus, *Wesmaëlius*.
confertus, *Pityophthorus*.
confinis, *Pityophthorus*.
confraternus, *Pipunculus*.
confusum, *Tribolium*.
confusus, *Dactylopius*.
Congo, Belgian, *Crociodolomia binotalis* on cabbage, etc., in, **572**; Aleurodids transmitting mosaic of cassava in, **153**; *Platyedra gossypiella* on cotton in, **572**; *Tinea vastella* damaging horns in, **294**; locusts in, **476**, **482**, **483**, **486**; new parasite of *Pseudococcus* in, **503**; cultivation of insecticidal plants in, **294**; parasites imported into Kenya from, against *P. kenya*, **665**.
congregatus, *Apanteles*.
Conium maculatum, new Aphid on, in California, **590**.
Connecticut, forest pests in, **73**, **77**, **176**; maize pests in, **179**, **430**, **456**; *Thrips tabaci* on onions in, **71**; orchard pests in, **428**, **429**; pests of tobacco and potato in, **177**, **178**; *Calomycterus setarius* in, **600**; beneficial insects and biological control in, **73**, **74**, **176**, **177**, **178**, **428**, **429**; regulations concerning transportation of nursery stock to other States and Canada from, **176**.
Conomorium eremita, parasite of *Erannis* in Crete, **172**.
Conopia exitiosa (see *Aegeria*).
Conorrhynchus (see *Cleonus*).
Conotrachelus bondari, on Anonaceae in Brazil, **567**.
Conotrachelus nenuphar (on apple), in Canada, **382**, **664**; bionomics of, in U.S.A., **382**; measures against, **383**, **664**.
constrictus, *Barbitistes*.
Contarinia fagi, bionomics and control of, on beech in Germany, **353**.
Contarinia humuli, on hops in Britain, **333**.
Contarinia mali, sp. n., measures against, on apple in Japan, **556**, **557**.
Contarinia medicaginis, factors affecting abundance of, on lucerne in Germany, **457**.
Contarinia nasturtii (on crucifers), in Czechoslovakia, **468**; in France, **167**; bionomics of, in Holland, **514**; types of injury to cauliflower by, **167**; measures against, **167**, **514**.
Contarinia pisi, on leguminous crops in Britain, **332**.
Contarinia pyrivora, characters distinguishing *C. mali* from, **556**.
Contarinia torquens (see *C. nasturtii*).
Contarinia tritici, in Holland, **268**; in Italy, **3**; bionomics and control of, on wheat and *Agropyrum*, **3**, **268**.
contraria, *Ochrogaster*.
convergens, *Hippodamia*.
convexifrons, *Dendroctonus*.
convexus, *Campoplex*.
convolvuli, *Myzus* (see *Macrosiphum solani*).
Convolvulus, insects attacking, **322**, **375**, **677**.
Cook Islands, insects introduced into, against fruit-flies and *Cosmopolites*, **212**, **365**.
cooki, *Cremastus*.
Copaifera coleosperma, Bostrychids in timber of, in S. Africa, **60**.
cophita, *Gryllotalpa gryllotalpa*.
Copidosoma, parasite of *Phthorimaea operculella* in Brazil, **289**.
Copper Arsenate, properties and action on insects of basic form of, **421**, **422**.
Copper Carbonate, in sprays against Trypetids and Lepidoptera on *Citrus*, **330**, **331**.
Copper Sulphate, use of, for destroying *Oryctes*, **347**; in dusts against potato flea-beetles, **342**; use of, against *Rhizopertha* in pith helmets, **612**. (See Bordeaux Mixture.)
Copper Sulphate, Basic, as a corrective for foliage injury by calcium arsenate, **373**; basic copper

- arsenate compared with, as a fungicide, **422** ; not highly toxic to *Cylas formicarius*, **373**.
- Copra, insects infesting, **212, 213, 584**.
- coprosmae*, *Aphis*.
- Coptocercus biguttatus*, possibly on clove trees in Netherlands Indies, **227**.
- Coptotermes* (in building timber), in Central America, **56** ; in Australia, **545** ; in Barbados, **56, 384**.
- Coptotermes acinaciformis*, in Australia, **545** ; in Fiji, **212, 641** ; damaging plants, **546** ; damaging timbers, **212, 545, 641**.
- Coptotermes formosanus*, synonymy and distribution of, **384**.
- Coptotermes frenchi*, damaging trees in New South Wales, **546**.
- Coptotermes javanicus*, in Jamaica and Java, **384**.
- Coptotermes raffrayi*, in Australia, **546**.
- Coptotermes remotus*, Hill, **384**.
- Coptotermes remotus*, Silv. (see *C. formosanus*).
- Coptotermes testaceus*, damaging furniture and building timber in W. Indies, **55, 56, 384** ; characters of, **55** ; measures against, **55**.
- corallina*, *Mecistomela* (*Alurnus*).
- corbetti*, *Craniotectus*.
- Corchorus*, *Helopeltis bergrothi* on, in Sudan, **574**.
- Coryra cephalonica*, in stored cacao in Ceylon, **638**.
- Cordia myxa*, Galerucid on, in Burma, **693**.
- Cordyceps barberi*, infesting *Diatraea saccharalis* in Antigua, **660**.
- Corfu, *Apiomyia bergenstammi* in, **5**.
- Coriandrum sativum*, Aphids and virus disease of, in California, **590**.
- Corizus hyoscyami* (see *Therapha*).
- Corks, *Borkhausenia pseudopretella* damaging, in Scotland, **122**.
- Corn Borer, European (see *Pyrausta nubilalis*).
- Corn Ear Worm (see *Heliothis armigera*).
- Corn Root Worm (see *Crambus caliginosellus*).
- corni*, *Lecanium* (*Eulecanium*).
- Cornus*, cankerworms on, in New Jersey, **74**.
- cornutus*, *Bostrychophiles* ; *Phyllocoptes*.
- Corrosive Sublimate (see Mercury Bichloride).
- Corsica, new Coccids in, **48, 235** ; miscellaneous pests in, **459, 584** ; *Dolichopoda bormansi* in caves in, **604**.
- corticinella*, *Setomorpha* (see *S. rutella*).
- coruscus*, *Phalacrus* (see *P. fime-tarius*).
- coryli*, *Lecanium*.
- Corylus avellana* (see Hazel).
- Corymbites aeneus*, feeding habits of, in Germany, **398** ; on cereals and cabbage in Siberia, **679** ; ecology of, **679**.
- Corymbites aeripennis destructor*, bionomics of, in Alberta, **539** ; on potatoes in N. Dakota, **71**.
- Corymbites latus*, on cereals and lupins in Russian Union, **679, 683** ; ecology of, **679** ; measures against, **683**.
- Corynetes coeruleus*, in France, **584** ; predacious on other insects, **584**.
- Corynetes pusillus*, in France and Corsica, **584**.
- Corythuca gossypii*, food-plants of, in Jamaica, **239**.
- Coscineuta virens*, measures against, on cassava in Trinidad, **25**.
- Cosmolyce boetica*, *Microbracon greeni* ovipositing on, **129**.
- Cosmophila*, measures against, on cotton in Philippines, **184**.
- Cosmophila flava*, new Tachinid parasites of, in Queensland, **57** ; on cotton in Siam, **50**.
- cosmophilae*, *Zenillia*.
- cosmopolitana*, *Amphorophora* (see *A. lactucae*).
- Cosmopolites sordidus* (on banana), in Cook Islands, **212** ; in Fiji, **212, 365** ; in Formosa, **205** ; in Jamaica, **212, 238** ; in Java, **205** ; in Mysore, **291** ; in New South Wales, **184, 346** ; in Tahiti, **212, 365** ; experiment on migration of, in banana plantations, **346** ; effect of cultivation on susceptibility of bananas to, **346** ; utilisation of *Plaesus javanus* against, **205, 212, 238, 365** ; other measures against, **184, 291, 346**.
- costalis*, *Eutermes* (*Nasutitermes*) ; *Psylla*.
- Cotinis longitarsis*, in nests of *Atta texana* in Texas, **288**.
- Cotton (*Gossypium*), pests of, in S. Africa, **223, 281, 487, 488, 489, 490, 491** ; *Chalcodermus bondari* on, in Argentina, **413** ; *Platyedra gossypiella* on, in Belgian Congo,

- 572; pests of, in Brazil, 22, 34, 86, 136, 413; *Thrips tabaci* on, in greenhouse in Britain, 672; pests of, in Cyprus, 270; *Dysdercus mimus* on, in Ecuador, 164; locusts damaging, in Greece, 478; pests of, in India, 127, 128, 228, 560, 575, 576; pests of, in Japan, 225, 555, 557; pests of, in Java, 280; pests of, in Kenya, 666; pests of, in Manchuria, 340; pests of, in Nyasaland, 125, 126, 222; pests of, in Peru, 164, 385; pests of, in Philippines, 183, 184; pests of, in Queensland, 280, 281, 603; pests of, in N. Rhodesia, 222, 492; pests of, in S. Rhodesia, 222, 491, 492; pests of, in Russian Union, 43, 147, 150, 215, 304, 313, 314, 552, 609, 625; pests of, in Siam, 49; *P. gossypiella* on, in Sicily, 174; pests of, in Sudan, 572, 573, 574; pests of, in Tanganyika, 222, 492; pests of, in U.S.A., 82, 165, 242, 243, 244, 245, 246, 247, 340, 341, 372, 380, 381, 413, 416, 417, 500, 599; pests of, in West Indies, 220, 221, 222, 223, 271, 503, 660, 661; legislation against introduction of *Anthonomus grandis* into Barbados with, 661; susceptibility of varieties of, to pests, 49, 221, 222, 247, 281, 381, 417, 491; type of injury to, by Jassids, 281; effect of thrips on yield of, 413; insects and boll rots in, 34, 222, 290, 360, 389, 416, 417, 491; insects associated with "crazy top" in, 574; *Lygus lucorum* possibly transmitting virus disease in, 225, 555; general discussion of diseases and pests of, 336; cultural measures against pests of, 221, 222; effect of selenised, on pests, 220, 221, 222; hairiness of leaves of, in relation to *Aphis gossypii*, 243; calcium arsenate causing injury to, 247; (Baled), fumigation of, against *Platyedra gossypiella*, 53-55.
- Cotton Aphis (see *Aphis gossypii*).
- Cotton Boll Weevil (see *Anthonomus grandis*).
- Cotton Bollworm (see *Heliothis armigera*).
- Cotton Bollworm, Pink (see *Platyedra gossypiella*).
- Cotton Bollworm, Red or Sudan (see *Diparopsis castanea*).
- Cotton Flea-hopper (see *Psallus seriatus*).
- Cotton Leaf Worm (see *Alabama argillacea*).
- Cotton Pruner (see *Chalcodermus bondari*).
- Cotton Stainers (see *Dysdercus*).
- Cottonseed, pests in, and their control, 165, 174, 576; X-rays for detecting *Platyedra gossypiella* in, 147; *Tribolium castaneum* infesting insulation material containing, 640; (meal), in baits for cutworms, 287.
- Cottony Cushion Scale (see *Icerya purchasi*).
- Cotyledon, *Aphis* on, in Australia, 448.
- Couch Grass (see *Agropyrum repens*).
- Cowpeas (*Vigna*), pests of, in Japan, 361, 556, 617; *Elasmopalpus lignosellus* on, in Porto Rico, 501; *Ootheca mutabilis* on, in S. Rhodesia, 125; pests of, in U.S.A., 76, 82, 370, 500, 644; susceptibility of varieties of, to *Chalcodermus aeneus*, 82; insecticides causing injury to, 82.
- Crambus caliginosellus*, measures against, on tobacco in Tennessee, 380, 652.
- cramerella*, *Acrocerocops*.
- Craniotectus corbetti*, on *Derris* in Malaya, 539.
- crassipes*, *Apiomerus*.
- crassissima*, *Lachnosterna* (*Phyllophaga*).
- crataegi*, *Aporia*; *Thomasiniana*.
- Crataegus* (Hawthorn), pests of, in Australia, 21, 292; new *Thomasiniana* on, in Britain, 673; pests of, in Germany, 114, 155; *Monosteira unicastata* on, in Morocco, 359; *Rhopalosiphum prunifoliae* on, in U.S.A., 542.
- Crataegus azarolus*, host-fruit of *Ceratitis capitata* in France, 195.
- Cratosomus bombina*, on Anonaceae in Brazil, 567.
- Cratosomus punctulatus*, on orange in Trinidad, 24.
- Cremastus biguttulus* (see *C. flavo-orbitalis*).
- Cremastus cooki*, parasite of *Ancyliis comptana* in Kansas, 376.
- Cremastus flaviventris*, sp. n. (parasite of *Cydia molesta*), bionomics of, in Argentina, 237; technique for breeding, 238.
- Cremastus flavoorbitalis*, 237; utilisation of, against *Lamprosema*

- blackburni* in Hawaii, **367**; parasite of *Chilo simplex* in Japan, **442**; reactions of, to coloured lights, **442**.
- Cremastus interruptor*, establishment of, against *Rhyacionia buoliana* in Connecticut, **74**.
- Cremastus rubeo*, sp. n. (parasite of *Cydia molesta*), bionomics of, in Argentina, **237**; technique for breeding, **238**.
- Crematogaster victima missouriensis*, associated with *Aphis pawneepae* in Kansas, **376**.
- Creontiades femoralis*, effect of, on cotton in Arizona, **417**.
- Creosote, dust containing, against Jassids on cotton, **281**; methods of treating timber with, against pests, **181, 337**; other uses of, against insects, **366, 420**.
- Cresol, in spray for destroying potato plants and Aphids, **333**.
- Crete, Geometrid and its parasites on olives in, **171, 172**.
- cretica*, *Sesamia*.
- cribrata*, *Pycnarmon*.
- Cricket-bat Willow (see *Salix alba* var. *coerulea*).
- Cricula trifenestrata*, on *Altingia excelsa* in Java, **227**.
- crinita*, *Sitona*.
- crinitus*, *Polistes*.
- Crioceris asparagi* (Asparagus Beetle), measures against, in Utah, **426**; bionomics of, in Italy, **471**; parasites of, **194, 195, 472**.
- cristatus*, *Parabatus*; *Phloeosinus*.
- crithmi*, *Margarodes buxtoni*.
- Crithmum maritimum*, Coccid on, in France, **235**.
- critolaus*, *Spathius*.
- Crocidolomia binotalis* (on crucifers), in Belgian Congo, **572**; in Fiji, **641**; in Seychelles, **335**; *Polistes* predacious on, **336**.
- Crossocosmia sericariae* (see *Sturmia*).
- Crossotus albopunctatus*, on cotton in Kenya, **666**.
- Crotalaria*, *Anomala expansa* on, in Formosa, **363**.
- Crotalaria juncea*, *Exora* spp. on, in S. Rhodesia, **125**.
- Croton*, *Psallus seriatus* on, in U.S.A., **245, 538**.
- Croton glandulosus*, *Chalcodermus bondari* on, in Brazil, **414**.
- Crows, destroying *Cleonus punctiventris* in Czechoslovakia, **470**.
- cruciata*, *Austroicetes*.
- cruciferae*, *Phyllotreta*.
- cruciferarum*, *Plutella* (see *P. maculipennis*).
- crucigerus*, *Dociostaurus*.
- cruda*, *Monima*.
- Cryolite, in baits, **287, 379, 537, 595**; dusting with, **244, 246, 258, 286, 370, 371, 372, 373, 378, 379, 431, 461, 525, 595**; carriers for, **258, 286, 371, 379, 431, 461, 525, 595**; spraying with, **70, 159, 376, 379, 383, 425, 528, 595, 648**; new method of spraying with, **383**; tobacco plants dipped in, **380, 652**; tests of toxicity of, to insects, **246, 287, 373, 422, 528, 537, 627**; formulae containing, **258, 286, 379, 425, 431, 461, 525, 595, 652**; and Bordeaux mixture, magnesium oxide as a corrective for injury to apple by, **425**; and derris, **370**; and soy-bean flour, **70**; and sulphur, **244, 595**; and thiophenylamine **379**; problems of residues of, **104, 432, 595, 648**; other insecticides compared with, **159, 246, 286, 422, 525, 627**.
- Crypticerya* (see *Palaeococcus*).
- Cryptoblabes gnidiella*, on vines in Palestine, **191**.
- Cryptococcus aceris*, sp. n., on maple in Caucasus, **680**.
- Cryptognatha nodiceps* (predacious on Coccids), in Fiji, **212**; introduced into Hawaii, **366**; introduced into other W. Indian Islands from Trinidad, **25, 502**.
- Cryptogonus orbiculus* var. *nigripennis*, establishment of, against *Pinnaaspis buxi* in Hawaii, **367**.
- Cryptohypnus riparius* (see *Hypnoidus*).
- Cryptolaemus*, utilisation of, against mealybugs in Abkhazia, **454**.
- Cryptolaemus montrouzieri* (predacious on Coccids), ants hindering utilisation of, in S. Africa, **323**; utilisation of, in California, **437**; establishment of, in France, **266, 267**; in Queensland, **345**; utilisation of, in Russian Union, **454, 455, 589**; relation of development of, to temperature, **589**.
- Cryptomyzus*, status of, **99, 100**. (See *Capitophorus*.)
- Cryptoparlatores pini*, sp. n., on pine in India, **224**.
- Cryptophlebia* (see *Argyroplote*).
- Cryptorrhynchus*, question of scope of, **595**.

- Cryptorrhynchus gravis*, on mango in Netherlands Indies, 227; systematic position of, 595.
- Cryptorrhynchus lapathi*, relation of, to decrease of willow in Britain and Holland, 563; on elm in U.S.A., 499; other food-plants of, 563; systematic position of, 595.
- Cryptorrhynchus mangiferae*, systematic position of, 595.
- Cryptostemma calendulaceum*, *Haltidius destructor* on, in W. Australia, 131; in baits for *Listroderes obliquus*, 186.
- Cryptotermes* (see *Calotermes*).
- Cryptus*, parasite of *Neosyrista similis* in Japan, 211.
- Cryptus oxymorus*, parasite of *Setora nitens* in Java, 347.
- Cryptus sponsor*, parasite of *Dicranura vinula* in Morocco, 196.
- Crystal Violet, tests of, in baits for grasshoppers, 134.
- Ctenolepisma longicaudata*, measures against, in Australia, 510.
- Cuba, Tachinid parasite of *Diatraea* introduced into Louisiana from, 378.
- Cubé, dusting with, 71, 177, 179, 249, 250, 286, 417, 426, 435, 497, 498, 584; carriers for, 177, 179; wetting agents improving dusts of, 177, 179; spraying with, 28, 30, 71, 72, 177, 179, 249, 383, 426, 429, 497, 498, 530; spreaders and adhesives for, 28, 30, 71, 72, 177, 179; tests of toxicity of, to insects, 250, 286; effect of weathering on toxicity of, 249; of no value in baits for cutworms, 287; formulae containing, 30, 71, 177, 179, 417, 426, 498, 530; and barium fluosilicate, 177; and sulphur, 71, 72; rotenone content of, 30, 71, 177, 179, 250, 286, 426, 498, 530; determination of rotenone in, 392; other insecticides compared with, 72, 177, 250, 417, 498.
- Cucumber, pests of, in Fiji, 366, 641; *Ceratia similis* on, in Formosa, 618; *Myzus ornatus* on, in Germany, 688; *Megumenum gracilicorne* on, in Japan, 441; *Dicyphus* on, in New South Wales, 449; *Diaphania hyalinata* on, in Porto Rico, 501; *Tetranychus* on, in Russian Union, 310; pests on, in green-houses in U.S.A., 142, 652; Aphids and virus disease of, 672, 686, 687, 688.
- cucumeris*, *Epitrix*.
- cucurbitae*, *Dacus* (*Chaetodacus*).
- Culex* spp., tests of pyrethrum extracts on larvae of, 135.
- culinaris*, *Rhyncolus*.
- cultratus*, *Microphanurus*.
- Cultural Practices, influence of, on insect pests, 221, 346, 389, 655.
- Cumin Seed (Stored), Coleoptera in, in Cyprus, 270.
- cumingi*, *Promecotheca*.
- cunea*, *Hyphantria*.
- cuneiformis*, *Saissetia*.
- cuprea*, *Anomala*.
- Cupressus*, *Phloeosinus bicolor* on, in France, 225; *Aesiotus leucurus* on, in New South Wales, 602.
- Cupressus macrocarpa*, *Phloeosinus* spp. on, in France and U.S.A., 225, 324.
- Cupressus sempervirens*, pests of, in Turkey, 218, 219.
- cupreus*, *Pterostichus* (*Poecilus*); *Rhynchites*.
- Cuprex, 580.
- Cuprous Cyanide, dusts and sprays containing, against Lepidopterous tomato pests, 379, 431.
- Curculio elephas* (on chestnut), bionomics and control of, in France, 358; in Greece, 452; in Italy, 358.
- Curculio nucum*, on hazel in Greece, 452.
- Curculio*, Apple (see *Tachypterellus quadrigibbus*).
- Curculio*, Cowpea (see *Chalcodermus aeneus*).
- Curculio*, Plum (see *Conotrachelus nenuphar*).
- Curled Chervil (see *Anthriscus cerefolium*).
- Curly-top of Beet, relation of *Eutettix tenellus* to, in Idaho, 286, 412; in other plants, 286; age in beet increasing resistance to, 412.
- Currant, Aphids on, in Britain, 333; spray programme for, in Britain, 396; *Aspidiotus ostreaeformis* on, in Czechoslovakia, 468; pests of, in Germany, 114, 467; pests of, in U.S.A., 178, 179, 596; *Parlatoria oleae* on, in Uzbekistan, 474; not attacked by *Capitophorus korschelti*, 100.
- Currant, Alpine (see *Ribes alpinum*).

- Currant, Black, pests of, in Britain, **2, 236**; new Aphid on, in Germany, **100**; *Aphis varians* on, in U.S.A., **596**; *Dasyneura tetensi* confined to, **673**; lime-sulphur causing injury to, **2**.
curvipennis, *Dacus* (*Chaetodacus*).
 Custard Apple (see *Anona*).
custator, *Thyanta*.
custos, *Auriga* (*Arma*).
cuthbertsoni, *Analeurops*.
 Cutworms, baits for, **32, 67, 125, 178, 368, 390**; other measures against, **368, 370, 379, 380, 390, 661**.
 Cyanofumer, **15**.
cyanonotus, *Cheiloneurus*.
cyanura, *Mimastra*.
Cybocephalus, predacious on *Targionia vitis* in Italy, **471**.
Cyclamen persicum, *Brotolomia meticulosa* on, in greenhouses in Austria, **171**.
Cyclocephala immaculata, Scoliid parasites of, on sugar-cane in Florida, **657**.
 Cyclohexylamine Derivatives, phytotoxic and insecticidal properties of, **141**.
Cydia funebrana (on plum), in Cyprus, **270**; bionomics and control of, in Switzerland, **336**.
Cydia glycinivorella (on soy bean), bionomics of, in Japan, **19, 624**; in Korea, **19**; in Manchuria, **19, 340, 361**.
Cydia inopinata, on apple in Manchuria, **340**.
Cydia leucostoma, new parasite of, on tea in Java, **94**.
Cydia molesta (Oriental Peach Moth), in Argentina, **237, 601**; in Australia, **293, 382, 544, 639, 640**; in China, **450, 667**; in Italy, **197, 199, 200, 235, 515**; in Manchuria, **340**; in Switzerland, **438**; in U.S.A., **377, 382**; potential distribution of, in Europe, **7**; on apple, **340**; on pear, **235, 450, 516, 667**; bionomics of, **639, 668**; parasites and biological control of, **237, 293, 377, 382, 426, 544, 602, 639, 640**; other measures against, **199, 235, 450, 515, 516, 639, 668**; causes of failure of spraying against, **544**; beta-naphthol bands of little value against, **197**; survey of data on, **7**; attempted utilisation of parasites of, against *C. nigricana*, **39**.
Cydia nigricana (Pea Moth), in Canada and Britain, **38**; in Russian Union, **109, 589**; natural enemies and biological control of, **38, 39, 109, 589**.
Cydia pomonella (Codling Moth), **7**; in Afghanistan, **575**; in Algeria, **191-193**; in Australia, **20, 57, 186, 293, 390, 554**; in Baluchistan, **51**; in Canada, **66, 664**; in Czechoslovakia, **468**; in Denmark, **117**; in France, **168, 357, 622**; regulations dealing with use of arsenicals against, in France, **168**; in Germany, **114, 300**; in Holland, **578**; in Italy, **4, 104, 197, 235**; in Morocco, **283**; in Poland, **163, 694**; in Russian Union, **109, 587, 589, 610, 623, 683**; in U.S.A., **31, 33, 52, 70, 133, 134, 166, 272, 273, 343, 410, 419, 432, 525, 534, 536, 643, 648, 652**; road dust apparently increasing infestation of apple by, **33**; on pear, **4, 20, 51, 114, 168, 192, 197, 235, 293, 357, 383, 390, 410**; on quince, **4, 51, 192**; on stone-fruits, **4**; on walnut, **4, 197**; bionomics of, **4, 51, 117, 163, 192, 283, 293, 300, 357, 578, 587, 622, 652, 694**; application of bioclimatics to study of, **327**; parasites of, **4, 109, 293, 579, 588, 589**; birds destroying, **114, 588**; measures against, **4, 20, 31, 52, 57, 66, 70, 133, 134, 163, 166, 186, 192, 197, 235, 272, 273, 293, 300, 383, 390, 410, 432, 525, 534, 536, 554, 579, 610, 623, 643, 648, 653, 664, 683**; tests of insecticides on, **142, 298, 419, 426, 528**; resistance to lead arsenate of strains of, **343**.
Cydia pomonella putaminana, **197**.
Cydia splendana (on chestnut), bionomics and control of, in France, **358**; in Greece, **452**; in Italy, **358**.
Cylas formicarius (Sweet Potato Weevil), risk of introducing, into Japan from Loochoo Islands, **616**; factors affecting infestation by, in Porto Rico, **434**; measures against, in U.S.A., **373, 379, 539, 643**; bionomics of, **373, 379, 616**.
cylindrator, *Lissonota*.
cylindrica, *Chaetocnema*.
cylindricollis, *Sitona*.
Cymbidium, Coccid on imported, in Japan, **617**.
Cynara scolymus (see Artichoke).
 Cynipids, records of parasitic, in Germany, **352**.

Cynodon, relation of *Nomadacris septemfasciata* to, in E. Africa, 62, 387, 388.

cyperi, *Athesapecta*.

Cyperus, relation of *Nomadacris septemfasciata* to, in E. Africa, 62, 387, 388; *Pseudococcus brevipes* on, in Brazil, 23; *Nymphula vittalis* on, in Korea, 619.

Cyperus rotundus, *Spodoptera mauritia* on, in Formosa, 363; insects introduced into Australia and Fiji from Hawaii against, 367, 546.

Cypress (see *Cupressus*).

Cyprus, miscellaneous pests in, 270; beneficial insects and biological control in, 270, 271.

Cyrtogaster vulgaris, parasite of *Phytomyza ilicis* in Britain, 669.

Cyrtomorpha flaviscutellaris, destroying eggs of *Austroicetes cruciata* in W. Australia, 56.

Cyrtopeltis varians (see *Engytatus geniculatus*).

Cyrtorhinus pellicia, ovipositing in egg-cluster of *Saccharosydne saccharivora* in Florida, 657.

Cytharea infuscata, destroying eggs of *Doclostaurus maroccanus* in Spain, 477.

Czechoslovakia, forest pests in, 468, 469, 518, 564; list of leaf-miners in, 145; miscellaneous pests in, 468-471; popular names of vegetable pests in, 512; beneficial insects in, 145, 518; utilisation of *Formica rufa* in, 564.

cziceki, *Tipula*.

D.

Dachicida, types of, in baits for *Dacus oleae*, 98.

Dachicida P, composition of, 98.

Dacivoro, in baits for *Dacus oleae*, 98, *Dacryphalus sumatranus*, sp. n., on nutmeg in Sumatra, 512.

dactylidis, *Dasyneura*.

Dactylis glomerata, *Dasyneura dactylidis* on, in Britain, 635.

Dactyloctenium aegyptium, *Saccharosydne saccharivora* on, in Florida, 657.

dactylopii, *Leptomastix*.

Dactylopius confusus, establishment of Argentine strain of, against *Opuntia aurantiaca* in Queensland, 345; *Cryptolaemus montrouzieri* predacious on, 345.

Dactylopius opuntiae, utilisation of strains of, against *Opuntia* spp. in Queensland, 345.

Dacus, in Fiji, 212, 213, 366; in Hawaii, 366; on *Citrus* in Samoa, 365; parasites and biological control of, 212, 213, 365, 366, 562.

Dacus ciliatus (*brevistylus*), bionomics of, on *Coccinia indica* in Madras, 561.

Dacus cucurbitae, on melon in Baluchistan, 577; experiments on infestation of fruits by, in Formosa, 206; relation of temperature to risk of introduction of, into Japan, 615; recently introduced into Kenya, 667; on *Coccinia indica* in Madras, 562; legislation against importation of, into U.S.A. from Hawaii, 344; measures against, 344.

Dacus curvipennis, rare on banana in Fiji, 366.

Dacus ferrugineus, fruits infested by, in Baluchistan, 577; parasites of, on *Solanum auriculatum* in Madras, 577.

Dacus ferrugineus dorsalis, experiments on infestation of fruits by, in Formosa, 206; relation of temperature to risk of introduction of, into Japan, 615.

Dacus ferrugineus tryoni, in Queensland, 345, 365, 602; in grapes, 365; breeding experiments with, 345; *Syntomosphyrum indicum* introduced from New South Wales against, 602.

Dacus oleae (Olive Fly), seasonal occurrence of, in Cyprus, 270; in Greece, 453; in Italy, 98, 568; intercepted in Russian Union, 439; baits for, 98, 270; doubtful value of bait-sprays against, 270, 453; survey of data on, 568.

Dacus passiflorae, in Fiji, 212, 366, 605; host fruits and development of, 212; 366; new parasite of, 605.

Dacus psidii, not occurring in Fiji, 366; bionomics and control of, in New Caledonia, 131; on guava and *Inocarpus* in Society Is., 294.

Dacus xanthodes, in Fiji, 212, 366; on granadilla, 212.

Dacus zonatus, fruits infested by, in Baluchistan, 577.

dahlemica, *Phlugiola*.

Dahlia, *Ceresa bubalus* on, in France, 689; *Nysius turneri* on, in Tasmania, 226.

- Dakota, North, potato pests in, **70, 71** ; grasshoppers in, **33, 655**.
 Dakota, South, *Dendrosoter scolytivorus* in, **324**.
Dalbergia sissoo, *Plectoptera reflexa* on, in India, **612**.
dalmanni, *Habrolepis*.
 Dandelion (see *Taraxacum officinale*).
 Danzig, *Diprion pini* and its natural enemies in, **105, 397**.
daricella, *Leucoptera*.
darwiniensis, *Mastotermes*.
Dascillus cervinus, on pasture in Scotland, **122**.
Dasus seriatus, attacking seed potatoes and sugar-cane in Hawaii, **367**.
Dasus simplex, on tobacco in S. Rhodesia, **125** ; measures against, on coffee in Tanganyika, **127**.
Dasychira pudibunda, predacious enemies of, in forests in Germany, **354**.
Dasyneura airae, on *Aira flexuosa* in France, **634**.
Dasyneura alopecuri, on *Alopecurus pratensis*, **635**.
Dasyneura alpestris (on *Arabis*), synonymy of, **673**.
Dasyneura arabis (see *D. alpestris*).
Dasyneura brassicae, on swedes in Britain, **332**.
Dasyneura dactylidis, on *Dactylis glomerata* in Britain, **635**.
Dasyneura fagicola, sp. n., bionomics and control of, on beech in Germany, **353**.
Dasyneura festucae, sp. n., on *Festuca* in Britain, **635**.
Dasyneura graminis (on *Agrostis*), probably in Britain, **635** ; in New York, **635**.
Dasyneura plicatrix, food-plants and status of, **673**.
Dasyneura pyri (on pear), bionomics of, in Italy, **296** ; in New Zealand, **159** ; natural enemies of, **159, 296** ; measures against, **297**.
Dasyneura ribicola, food-plant and status of, **673**.
Dasyneura schneideri (see *D. alpestris*).
Dasyneura tetensi, food-plant and status of, **673**.
Dasyneura torquens (see *Contarinia nasturtii*).
Dasyneura triseti, sp. n., bionomics of, on *Trisetum flavescens* in Austria, **635**.
Dasynus manihotis, new parasites of, in Java, **19**.
Dasyscaphus parvipennis (parasite of *Selenothrips rubrocinctus*), in Trinidad, **25, 239** ; failure to establish, in Grenada, **25** ; introduction of, into Jamaica, **239**.
 Date Palm, *Pseudococcus brevipes* on, in Brazil, **23** ; new Eriophyid on, in California, **288** ; pests of fruit of, in Egypt, **506**.
Datura stramonium, *Phthorimaea operculella* on, in Brazil, **289** ; *Protoparce* spp. on, in U.S.A., **252, 253**.
debilis, *Micromalthus*.
Decadarchis, on coconut in Fiji, **212**.
Decadarchis heterogramma, on coconut in Fiji, **213** ; feeding on pupae of *Tirathaba trichogramma*, **213**.
Decadarchis psammaula, on coconut in Fiji, **212**.
decemlineata, *Leptinotarsa*.
decoratus, *Geocoris*.
Dectes spinosus, introduced into Australia against *Xanthium pungens*, **546** ; liable to attack artichoke, **546**.
Decticus albifrons, measures against, in Libya, **478**.
Decticus verrucivorus, in Jugoslavia, **480**.
defoliaria, *Erannis*.
 Degras (see Wool Grease).
delavoiei, *Dicranura vinula*.
 Delaware, *Cydia pomonella* in, **534** ; *Popillia japonica* and its biological control in, **377, 532**.
delhiensis, *Azotus*.
Delia (see *Hylemyia*).
delicatus, *Macrocentrus*.
Delphacodes striatellus (on rice), in Japan, **362** ; in Manchuria, **340** ; oviposition of, **362**.
deltæ, *Mesolecanium*.
Deltocephalus (see *Laevicephalus*).
Dendrocalamus giganteus, resistance of, to *Dinoderus minutus*, **501**.
Dendroctonus brevicornis, on *Pinus ponderosa* in U.S.A., **599**.
Dendroctonus convexifrons, on *Pinus ponderosa* in New Mexico, **599**.
Dendroctonus frontalis, in U.S.A., **324, 377, 599** ; on *Pinus taeda*, **377, 599** ; new parasite of, **324**.
Dendroctonus piceaperda, on spruce in Canada, **275, 276, 369**.
Dendroctonus ponderosae, outbreak of, on pines in U.S.A., **599**.

- Dendroctonus pseudotsugae*, on *Pseudotsuga taxifolia* in U.S.A., 599.
- Dendrol, 526, 527.
- dendrolimi*, Rhogas.
- Dendrolimus albolineatus*, new parasite of, in Sakhalin, 91.
- Dendrolimus pini*, parasite of, on pine in Germany, 354; studies on cold-hardiness in, in Russia, 404, 405.
- Dendrolimus punctatus*, bionomics and control of, on pine in China, 449, 451.
- Dendrolimus spectabilis* (on pine), *D. punctatus* recorded as, in China, 449; in Japan, 91, 209, 211, 441; effects of temperature and humidity on eggs of, 441; parasites and hyperparasites of, 91, 209, 211.
- Dendrosoter*, key to species of, in U.S.A., 324.
- Dendrosoter integer*, sp. n., parasite of Scolytids in U.S.A., 324.
- Dendrosoter protuberans*, parasite of Scolytids in Turkey, 522.
- Dendrosoter scaber*, sp. n., parasite of Scolytids in U.S.A., 324.
- Dendrosoter scolytivorus*, in U.S.A., 324.
- Dendrosoter sulcatus*, sp. n., parasite of Scolytids in U.S.A., 324.
- Denmark, miscellaneous pests in, 117, 518, 673; beneficial insects and biological control in, 117, 518.
- denticornis*, *Cerodontha*; *Limothrips*.
- denticoxa*, *Eurytoma* (see *E. nesiotae*).
- dentipes*, *Monodontomerus*.
- deplana*, *Lithosia* (see *Eilema depressa*).
- depressa*, *Eilema*; *Sarcophaga*.
- depressella*, *Emmalocera*.
- depressum*, *Steirastoma*.
- depressus*, *Palorus*.
- depunctalis*, *Nymphula*.
- Derelomus* (see *Prosoestus*).
- Dermatodes aeruginosus*, on tung nut trees in Java, 523.
- Dermestes*, *Necrobia* spp. associated with, 584.
- Dermestes frischii*, damaging timber in Germany, 7.
- Dermestes lardarius*, damaging timber and masonry in Germany, 7, 520; new fumigant against, attacking silkworm cocoons in Italy, 198; in house insulation in U.S.A., 640; review of measures against, 198.
- Dermestes peruvianus*, damaging timber in Germany, 7.
- derogata*, *Sylepta*.
- Derostenus*, parasite of *Dasyneura pyri* in Italy, 296.
- Derris, against Aleurodids, 530, 642; against Aphids, 30, 371, 395, 497, 498; against Jassids, 21, 115, 281, 413, 537; against other Rhynchota, 184, 227, 353, 417, 446, 523, 530; against Coleoptera, 69, 155, 156, 158, 184, 241, 249, 250, 269, 286, 298, 373, 426, 532, 584, 634; against Diptera, 297, 497, 556; against Lepidoptera, 17, 28, 33, 177, 179, 184, 191, 250, 251, 269, 365, 370, 380, 400, 431, 663, 689; in bait-sprays for *Cydia pomonella*, 300, 301; against *Parateletyrachus pilosus*, 429; against sawflies, 21, 117, 400; tests with, against *Sexava*, 277; against thrips, 233, 234, 465, 493, 525; action of, on honey bees, 402; tests of toxicity of, to insects, 17, 184, 249, 250, 365, 634, 642; dusting with, 17, 21, 30, 69, 155, 156, 158, 179, 184, 227, 249, 250, 251, 269, 277, 281, 286, 298, 353, 365, 370, 371, 373, 380, 395, 400, 402, 417, 426, 431, 497, 498, 523, 537, 584, 634; carriers for, 69, 179, 249, 250, 371, 380, 523, 537, 634; effect of addition of chloropicrin to dusts of, 471; spraying with, 17, 21, 30, 69, 115, 117, 156, 177, 179, 233, 234, 241, 249, 250, 286, 298, 395, 402, 413, 426, 446, 493, 497, 498, 525, 530, 532, 642, 663, 689; formulae containing, 17, 30, 177, 179, 184, 241, 300, 426, 493, 498, 523, 530, 532, 537, 689; and cryolite, 370; and oil emulsions, 33, 493, 642, 689; intermediary solvents for, when used with oils, 530; and pyrethrum, 155, 156, 158, 298, 471, 634; and soap, 233, 446, 530; other spreaders and adhesives for, 28, 30, 177, 179, 241, 249, 525, 530, 532; and tar distillates 298, 689; thiuram sulphides compatible with, 532; rotenone contents of, 17, 30, 69, 70, 179, 184, 233, 249, 250, 251, 269, 286, 365, 370, 371, 373, 380, 402, 417, 426, 493, 497, 498, 523, 530, 537, 642; determination of

- rotenone in, **392, 493**; resinate incorrect name for extracts of, **78**; tests of effects of rain and light on deposits of, **69, 241**; translocation of, in plants, **234**; survey of data on, as an insecticide, **104**; other insecticides compared with, **17, 155, 177, 249, 250, 251, 286, 298, 373, 498, 663**.
- Derris* spp., pests of field and stored, **502, 538**; cultivation and preparation for market of, **294, 336, 624**; insecticidal properties and constituents of, **250, 294, 623**.
- Derrisol, tests of, against thrips and *Psila rosae*, **127, 497**.
- destructor, *Aspidiotus*; *Corymbites* (*Ludius*) *aeripennis*; *Halotydeus*; *Lepidoglyphus* (*Glycyphagus*); *Mayetiola*; *Merisus*; *Scolytus* (see *S. scolytus*); *Tanymecus*; *Tribolium*.
- Detal (containing dinitro-o-cresol *q.v.*), **297, 298**.
- detersa*, *Euxoa*.
- Deudorix bimaculata* (see *Virachola*).
- Dewberry, pests of, in U.S.A., **31, 79**; *Dasyneura plicatrix* on, **673**; susceptibility of varieties of, to *Agrilus ruficollis*, **79**.
- Dexia rustica* (parasite of *Melolontha*), in Denmark, **117, 518**; in Germany, **608**; bionomics of, **518**.
- Diabrotica soror*, not transmitting virus disease of celery in California, **590**.
- Diachasma aino*, sp. n. (parasite of *Euphranta*), in Japan, **338, 620**; bionomics of, **338**.
- Diacrisia isabella*, food-plants of, in Oklahoma, **340**.
- Diacrisia lubricipeda*, *Troilus luridus* attacking, **354**.
- Diacrisia obliqua*, bionomics of, on lima beans in China, **129**; *Trichogramma* reared on, in India, **612**.
- Diacrisia virginica*, food-plants of, in Oklahoma, **340**.
- diadema, *Stomatodexia*.
- Dialeurodes chittendeni*, on rhododendrons in Britain, **295**.
- Dialeurodes citri*, in U.S.A., **256, 259, 530, 642, 649**; on *Citrus*, **256, 642, 649**; on ornamental plants, **259, 530**; measures and tests of insecticides against, **259, 530, 642, 649**.
- Dialeurodes citrifolii*, on *Citrus* in Florida, **256**.
- Diammonium Phosphate, tests of, in baits for *Dacus oleae*, **98**.
- dianaria*, *Boarmia selenaria*.
- Diaphania hyalinata*, on cucurbits in Porto Rico, **501**; water-melon not attacked by, **501**.
- Diaprepes*, probably on limes in Grenada, **25**.
- Diaprepes abbreviatus*, on sugar-cane in Barbados, **660**.
- Diarthronomyia* (*Chrysanthemum* Gall-midge), distribution and food-plant range of, **673**; legislation against introduction of, into Britain, **356**.
- Diarthronomyia hypogaea*, **356**; midge on commercial chrysanthemums distinct from, **673**.
- Diarthrothrips coffeae*, measures against, on coffee in Tanganyika, **127**.
- Diaspidiotus* (see *Aspidiotus*).
- diaspidis, *Aphytis* (*Aphelinus*).
- Diaspiniphagus similis* (see *Coccophagoides*).
- Diaspis bromeliae*, utilisation of *Chilocorus politus* against, on pineapple in Mauritius, **611**.
- Diaspis picicola* (see *Epidiaspis leperii*).
- Diaspis visci* (on *Juniperus*), in Czechoslovakia, **469**; measures against, in New York, **529**; on other conifers, **469**.
- Diastase, accelerating development of *Hylotrupes bajulus*, **335**.
- Diatomaceous Earth, unsatisfactory as a carrier for dinitro-o-cyclohexylphenol, **261**. (See Celite.)
- Diatraea* (on sugar-cane), in Br. Guiana, **524**; in Grenada, **25**; in Trinidad, **24**; utilisation of *Metagonistylum minense* against, **24, 505, 524**.
- Diatraea canella* (on sugar-cane), in Br. Guiana, **505**; in W. Indies, **182, 183, 272, 659**; relation of parasites of *D. saccharalis* to, **182, 183, 505, 659**; measures against, **272**.
- Diatraea lineolata*, erroneously recorded in St. Lucia, **182**.
- Diatraea saccharalis* (on sugar-cane), in Br. Guiana, **182, 505**; in U.S.A., **371, 372, 378, 382, 656, 658**; in W. Indies, **25, 182, 183, 378, 382, 424, 435, 502, 658, 659, 660**; susceptibility of varieties of sugar-cane to, **238, 372, 378**; *Cordyceps barlieri* infesting, **660**; parasites and biological control

- of, 25, 182, 183, 238, 272, 378, 382, 424, 435, 502, 505, 656, 658, 659, 660; other measures against, 272, 371, 378, 656.
- Diatraea (Argyria) sticticraspis*, on sugar-cane in India, 291, 558, 576; parasite of, 291; measures against, 576; damage caused by, to sugar-cane varieties, 558.
- Diatraea venosata* (on sugar-cane), in Formosa, 206, 363, 447; in India, 558; in Mauritius, 611; natural enemies and biological control of, 363, 364, 447, 611; relation of growth of sugar-cane to oviposition of, 206; damage caused by, to sugar-cane varieties, 558.
- diatraeae*, *Apanteles*; *Lixophaga*; *Theresia (Paratheresia)* (see *T. claripalpis*).
- Dibrachys*, parasite of spruce sawflies in Czechoslovakia, 518.
- Dibrachys affinis*, parasite of *Aegeria typhiaeformis* in Italy, 630.
- Dibrachys australia* (see *Pseudomicromelus*).
- Dibrachys cavus (boucheanus, clisiocampae)*, hosts of: in Argentina, 238; in Australia, 639, 640; in Germany, 630; in Italy, 629, 630; in Poland, 671; utilisation of, 238; bionomics of, 630; economic status of, 631; synonymy of, 434.
- Diceroprocta vitripennis*, bionomics of, on cotton in Arkansas, 165.
- Dichlorethyl Ether, uses of, against insects, 177, 272, 379, 526.
- Dichlorobenzene, and oils, for treating timber against carpenter bees, 337.
- Dichloropentane, against *Aegeria pictipes*, 527.
- Dichocrocis punctiferalis*, damaging teak seed in Burma, 693; measures against, on peach in China, 450; on papaya and *Citrus* in Queensland, 603.
- Dichroplus*, in Argentina, 214.
- dicincta*, *Mylabris*.
- Dicky Rice Weevil (see *Maleuterpes spinipes*).
- Dicranura vinula* var. *delavoiei*, bionomics of, on *Populus nigra* in Morocco, 196.
- Dictamnina*, measures against, on cacao in New Guinea Territory, 544.
- dictyospermi*, *Chrysomphalus*.
- Dicyphus*, food-plants and control of, in New South Wales, 449.
- differentialis*, *Melanoplus*.
- difficilis*, *Apanteles*; *Aphaereta*.
- Digitalis*, *Macrosiphum solani* on, in Germany, 687.
- Digitaria sanguinalis*, *Saccharosydne saccharivora* on, in Florida, 657.
- Diglycol Laurate and Oleate, as emulsifiers for oils, 642.
- dignus*, *Apanteles*.
- dilatatum*, *Piesma quadratum*.
- dimmocki*, *Pikonema*.
- Dimmockia*, 289.
- dimorphus*, *Ephialtes (Calliephialtes)*.
- Dinapate wrighti*, on *Washingtonia filifera* in California and Mexico, 569.
- Dinarmus coimbatorensis*, sp. n., parasite of weevils in India, 506.
- diniana*, *Enarmonia (Semasia)*.
- Dinitro-cresol, against Aphids, 237, 332, 533; against Capsids, 45, 237; against Coccids, 529, 535; against Coleoptera, 171, 298, 495, 606, 608; against Lepidoptera, 237, 400, 535; against Pentatomids, 353; against *Rhagoletis cerasi*, 297; against sawflies, 400; dusts containing, 171, 297, 353, 400, 495, 606, 608; sprays containing, 45, 171, 237, 332, 495, 529, 530, 533, 535, 608; and oils, 236, 332; causing injury to trees, 400, 529, 530; toxicity of, to fish, 514; other insecticides compared with, 231, 237, 298, 514, 534. (See Sodium Dinitro-ortho-cresylate.)
- Dinitro-ortho-cyclohexylphenol, against Aphids, 429, 461, 533, 535; against Coccids, 529, 534, 535, 649; against other insects, 535, 649; against mites, 261, 429, 461, 535, 649, 650; destroying predacious mites, 429; preparation of dusts containing, 261, 461, 650; sprays containing, 429, 461, 529, 530, 533, 534, 535, 649; salts of, 649; and oils, 429, 529, 530, 534, 535; causing injury to plants, 529, 530, 535, 649, 650; physical and chemical properties of, 261, 649; compared with tar distillates, 429, 534.
- Dinoderus brevis*, measures against, in bamboo in Jamaica, 181.
- Dinoderus minutus*, in bamboo in W. Indies, 181, 423, 501; resistance of certain species of bamboo

- to, **501**; *Peregrinator biannulipes* predacious on, **423**; measures against, **181**.
- Diocetes* (see *Angitia*).
- diomphalia*, *Lachnosterna* (*Holotrichia*).
- Dioryctria peyerimhoffi*, new parasite of, on *Cedrus* in Morocco, **58**.
- dioryctriae*, *Apanteles*.
- Diospyros kaki* (see *Persimmon*).
- Diparopsis castanea* (Red Cotton Bollworm), in S. Africa, **488**; in Nyasaland, **125, 222**; in S. Rhodesia, **492**; in Sudan, **573**; in Tanganyika, **492**; alternative food-plants of, **488, 489, 573**; bionomics of, **488, 492, 573**; *Pheidole* attacking, **489**; measures against, **222, 573**.
- Diphenyl, toxicity of, to grasshoppers, **134**.
- Diplachne*, relation of *Nomadacris septemfasciata* to, in Tanganyika, **387**.
- Diplogaster*, parasite of *Horistonotus uhleri* in S. Carolina, **500**; probably infesting *Dexia rustica* in Denmark, **519**.
- Diploptera dytiscoides*, measures against, on coconut in Hawaii, **367**.
- Diplosis*, on pine in Japan, **339**.
- Diplosis humuli* (see *Contarinia*).
- Diplosis mori* (Mulberry Gall-midge), bionomics of, in Korea, **337**.
- Diprion*, *Dirhincus magnicornis* parasitic on, in Poland, **232**.
- Diprion abietis*, on spruce in Quebec, **464**.
- Diprion frutetorum*, records of, in U.S.A., **600**.
- Diprion lecontei* (on pines), in Canada, **53, 464**; in U.S.A., **461**; measures against, **53, 461**.
- Diprion pinetum* (on pines), measures against, in Michigan, **461**; in Quebec, **464**.
- Diprion pini* (on pines in Europe), bionomics and population studies of, **105, 397**; natural enemies and diseases of, **105, 232, 397, 398**; characters of, **7, 104**.
- Diprion polytomum* (European Spruce Sawfly), in Canada, **176, 275, 276, 368, 381, 382, 464, 647**; in U.S.A., **176, 368, 381, 382, 647**; extent of damage to spruce by, **275, 276**; bionomics and forms of, **176, 369, 647**; parasites and biological control of, **276, 369, 381, 382**.
- Diprion sertifer*, on *Pinus mugo* in Czechoslovakia, **469**; new *Tritneptis* parasitic on, in U.S.A., **434**.
- Diprion similis* (on pines), measures against, in Michigan, **461**; natural enemies and diseases of, in Poland, **670**; character distinguishing *D. pini* from, **7**.
- diprioni*, *Tetracampe*.
- dipronis*, *Tritneptis*.
- dipsacea*, *Heliothis* (*Chloridia*).
- Diptilomiopus prunorum*, sp. n., on *Prunus* spp. in California, **288**.
- Dirhincus alboannulatus*, parasite of *Sphinx pinastri* in Poland, **677**.
- Dirhincus magnicornis*, parasite of *Diprion* in Poland, **232**.
- Dirhinus* (parasite of *Dacus* spp.), introduced into Cook Islands and Samoa, **212, 365**; bionomics and utilisation of, in Fiji, **212, 213**.
- Dirhinus auratus*, parasite of *Dacus ferrugineus* in Madras, **577**.
- Dirhinus giffardi*, introduced into Porto Rico against *Anastrepha*, **502**; reared on *Musca domestica*, **502**.
- dirhodum*, *Macrosiphum* (*Amphorophora*).
- discedens*, *Phyllotreta vittata*.
- discodirus*, *Opilo*.
- discoidalis*, *Exora*.
- dispar*, *Bothriophryne*; *Lymantria* (*Porthesia*, *Porthetria*).
- disparis*, *Ichneumon*; *Pimpla*.
- dissimilis*, *Xylocopa*.
- Dissosteira carolina*, on tobacco in Connecticut, **178**.
- Dissosteira longipennis*, study of flights of, in Colorado, **646**.
- disstria*, *Malacosoma*.
- distigma*, *Chilocorus*.
- distincta*, *Galerucella*.
- distinguendus*, *Haplothrips*; *Lariophagus*.
- diversicolor*, *Chrysomphalus pinnulifer*.
- Diversinervus*, bionomics and utilisation against *Saissetia oleae* of introduced species of, in California, **424**; key to species of, **40**.
- Diversinervus stramineus*, sp. n., parasite of *Saissetia persimilis* in Transvaal, **40**.
- diversus*, *Microdus* (*Bassus*).
- divinatorius*, *Liposcelis* (*Troctes*).
- divisa*, *Monolepta*.
- divisus*, *Macrosteles*.

- Dociostaurus crucigerus brevicollis*, in Russian Union, **320, 386**; ecology and migrations of, **386**.
- Dociostaurus maroccanus*, in Fr. N. Africa, **477, 480**; in Cyprus, **270**; loss due to, in Greece, **478**; in Yugoslavia, **479**; in Libya, **478**; in Poland, **403**; in Portugal, **479**; in Spain, **477**; in Transcaucasia, **321**; crops attacked by, **478**; phases of, **321, 480**; breeding centres and ecology of, **321, 477, 480**; *Cytherea infuscata* destroying eggs of, **477**; measures against, **477, 478, 479, 480**.
- doddi*, *Cactoblastis*.
- Dodecyl Rhodanate (see Thiocyanates).
- Dogwood (see *Cornus*).
- Dolba hylaeus*, parasitised by *Apanteles congregatus* in U.S.A., **253**.
- Doleschallia bisaltide*, on *Eranthemum* in Fiji, **641**.
- Dolichocolon australe*, sp. n., parasite of *Laphygma exempta* in Queensland, **263**.
- Dolichocolon orbitale*, sp. n., parasite of *Hepalia machaeralis* in India, **263**.
- Dolichoderus bituberculatus*, in houses in Formosa, **446**.
- Dolichopoda*, in caves in Mediterranean Region, **604**.
- Dolichopoda bormansi*, in caves in Corsica, **604**; imported into England, **604**; synonymy of, **604**.
- Dolichos lablab*, attraction of strains of, for *Heliothis armigera* in southern S. Africa, **223, 488, 489, 491**; *Systates exaptus* on, in S. Rhodesia, **124**.
- Dolichos melanophthalmus*, *Plodia interpunctella* in seed samples of, in Italy, **198**.
- Dolycoris*, on cereals, etc., in Germany, **352, 631, 632**; type of injury to cereals by, **352, 353**; bionomics and ecology of, **631, 632**; measures against, **353**.
- Dolycoris baccarum*, parasites of, on cereals in Germany, **632**; on tobacco in Poland, **162**.
- Dombeya rotundifolia*, relation of *Dysdercus nigrofasciatus* to, in S. Africa, **490**.
- domestica*, *Musca*.
- domesticus*, *Glycyphagus*.
- dominica*, *Rhyzopertha*.
- Dominican Republic, new Coccid on pines in, **392**; Coccinellids introduced into, **502**.
- Doralis* (see *Aphis*).
- Dorcadion*, and white ear of wheat in Russian Union, **680**.
- dorsalis*, *Dacus ferrugineus*; *Scirtothrips*.
- Doryctes gallicus*, parasite of *Chrysobothris igniventris* in Turkey, **219**.
- Dosage-Mortality Curve, **66, 111**.
- Douglas Fir (see *Pseudotsuga taxifolia*).
- Douglas Fir Beetle (see *Dendroctonus pseudotsugae*).
- Draecena pelochra*, on beans in Fiji, **641**.
- Dragonflies, destroying *Nymphula vittalis* in Korea, **619**.
- Drepanothrips reuteri*, bionomics of, on vines and oak in Crimea, **43**.
- Dreyfusia* (see *Chermes*).
- dromedarius*, *Xiphidria* (see *X. prolongata*).
- druparum*, *Callimome*.
- Dryocoetes abietinus*, sp. n., on *Abies sachalinensis* in Japan and Sakhalin, **615**.
- Dryocoetes minor*, on oak in Sicily, **522**; bionomics of, on chestnut in Turkey, **522**.
- dubia*, *Anomala*.
- ducens*, *Feltia*.
- Ducks, utilisation of, against locusts in China, **450**.
- dumetana*, *Tortrix*.
- Dung, in baits for locusts and Tenebrionids, **320, 321**; trap heaps of, for *Oryctes*, **347**.
- Dusting, types of equipment for, **247, 266, 299, 325, 371**; use of aircraft for, **74, 75, 299, 514, 610, 645**; spraying compared with, **177, 179, 249, 266, 495, 497, 498, 514, 610**.
- Dusts, experiments with new proprietary, against forest pests, **231**; uses of oil-impregnated, **75, 308**; toxicity of inert, to *Bruchus obtectus*, **531**; cleaning habit of insects in relation to, **139**; effect of electric charges and carriers on adhesiveness of, **309**; relation of dilution to insecticidal efficiency of, **139**.
- Dutch Elm Disease (see *Ophiostoma ulmi*).
- Dutox, **70, 425**. (See Barium Fluosilicate.)
- Dyk's Method, for estimating prevalence of *Lymantria monacha*, **400**.
- dysderci*, *Hyalomyia* (*Euphorantha*).

Dysdercus (Cotton Stainers), in S. Africa, **489, 490, 491**; in Brazil, **22, 34, 86**; in Nyasaland, **125**; in Peru, **385**; in Sudan, **574**; susceptibility of varieties of cotton to, **222**; bionomics and alternative food-plants of, **489, 490**; associated with boll-rots, **34, 222, 290, 389, 491**; natural enemies of, **22, 86, 574**; measures against, **574**.

Dysdercus cardinalis, on cotton in Kenya, **666**.

Dysdercus cingulatus (on cotton), measures against, in Philippines, **184**; in Siam, **50**.

Dysdercus fasciatus (on cotton), bionomics of, in S. Africa, **489, 490, 491**; in Kenya, **666**; in N. Rhodesia, **222, 492**; in S. Rhodesia, **492**; incidence of, in Sudan, **573**; in Tanganyika, **492**; alternative food-plants of, **222, 489, 490, 491, 492, 573**; effects of temperature and humidity on, **491**.

Dysdercus honestus, natural enemies of, on cotton in Brazil, **86**.

Dysdercus howardi, toxicity of selenium-treated cotton to, in Trinidad, **221**.

Dysdercus intermedius, on cotton and *Sterculia* in southern Africa, **489, 492**.

Dysdercus megalopygus (see *D. cingulatus*).

Dysdercus mendesi, natural enemies of, on cotton in Brazil, **22, 86**.

Dysdercus mimulus, and boll rots in cotton in Arizona, **416, 417**; measures against, **417**.

Dysdercus mimus, on cotton in Ecuador, **164**; on wild malvaceae in Peru, **164**.

Dysdercus nigrofasciatus (on cotton), bionomics and alternative food-plants of, in S. Africa, **489, 490, 491**; in Kenya, **666**; in Sudan, **573**.

Dysdercus orientalis, in Kenya, **666**.

Dysdercus ruficollis, natural enemies of, on cotton in Brazil and Peru, **22, 86, 164**; measures against, **164**.

Dysdercus sidae, new parasite of, in Queensland, **57**.

Dysdercus supersticiosus (on cotton), in N. Rhodesia, **222, 492**; in S. Rhodesia, **492**; in Sudan, **573, 574**; alternative food-plants of, **222, 492, 573, 574**.

Dysdercus suturellus, physiological factors affecting abundance of, **258**.

Dysoxylon hamiltonii, *Xylocopa latipes* in timber of, in India, **337**.
dytiscoides, *Diploptera*.

E.

Earias, parasite of, on cotton in India, **575**; on cacao in New Guinea Territory, **544**.

Earias chromataria, bionomics of, on cotton in Philippines, **183**; experimentally attacked by *Trichogramma minutum*, **184**; measures against, **184**.

Earias fabia, bionomics and control of, in Philippines, **183, 184**; on cotton in Siam, **50**.

Earias huegeli, on cotton in Queensland, **603**.

Earias insulana (on cotton), in Cyprus, **270**; in Sudan, **573**.

Earthworms, *Lacon murinus* feeding on, **398**.

Earwig, European (see *Forficula auricularia*).

Eberhardia, bionomics and identity of species of, on mushrooms in Britain, **1, 2**.

Eberhardia alberti, **1**.

Echinochloa crus-galli, *Chilo simplex* on, in Manchuria, **340**.

Echinochloa pyramidalis, relation of *Nomadacris septemfasciata* to, in Tanganyika, **387, 388**.

Echinochloa stagnina, **12**; *Nomadacris septemfasciata* not found on, in Fr. W. Africa, **571**.

echinopus, *Rhizoglyphus*.

Ecthromorpha intricatoria, parasite of cutworms in New South Wales, **279**.

Economic Entomology, general papers on, **261, 407, 531, 600**; value of collections in work on, **568**; publications on, in Finland in 1938, **694**; problems and development of: in India, **391, 448**; in Italy, **474**; in Russian Union, **214**; in U.S.A., **261, 407**.
Ecpantheria icasia, on vanilla in Porto Rico, **501**.

ectypus, *Phlebetes*.

Ecuador, *Dysdercus mimus* on cotton in, **164**.

efformata, *Anaitis*.

Egg-plant, *Phthorimaea operculella* on, in Brazil, **289**; *Epilachna vigintioctomaculata* on, in Fiji,

- 641; *Pocilocerus pictus* on, in India, 577; pests of, in Jamaica, 239; pests of, in Japan, 225, 446, 555; *E. vigintioctomaculata* on, in Korea, 362; *Paratrioza cockerelli* on, in Texas, 651; *Lygus lucorum* possibly transmitting virus disease in, 225, 555.
- Egypt, *Acherontia atropos* on olive in, 175; new Aphids in, 160; Coccids in, 506, 507, 508, 509; new introduced parasite of *Phenacoccus hirsutus* in, 506; *Achrysophagus aegyptiacus* reared from Coccinellids in, 40; pests of dates in, 506; *Gryllotalpa* spp. in, 509; locusts in, 481; pests of stored products in, 219, 506; *Aphelinus mali* imported into Palestine from, 127.
- Eilema depressa*, characters distinguishing *Lymantria monacha* from, 466.
- Eirenephilus longipennis*, bionomics and control of, in Japan, 618.
- Elaeagnus*, *Chrysomphalus* spp. on, in Japan and New Zealand, 91, 524.
- Elaeis guineensis*, pests of, in Dahomey, 347-349.
- Elaeochlora viridicata*, in Argentina, 214.
- Elaphria* spp., parasites of, on sugar-cane in Florida, 657.
- Elasmopalpus lignosellus*, on sugar-cane in Florida, 657; food-plants of, in Porto Rico, 501.
- Elasmus*, parasite of *Pyrausta aurata* in Morocco, 193.
- Elasmus zehntneri*, parasite of *Scirpophaga* spp. in Mysore, 291.
- Electric Cables, *Xyllocopa latipes* boring in lead sheathing of, in India, 337.
- Electric Charges, effects of, on dusts and sprays, 309, 411.
- Electricity, uses of, against pests, 31, 137, 138, 260, 442.
- elephas*, *Curculio* (*Balaninus*).
- Elettaria cardamomum*, Eupterotid on, in Mysore, 625.
- Elgeté, composition and use of, against whiteflies, 530.
- Elgetol (containing dinitrocresol *q.v.*), 529, 530, 535.
- elusus*, *Lygus*.
- Ellophia athasaria*, 143.
- Ellophia fiscellaria*, in forests in Quebec, 464.
- Elm (*Ulmus*) *Galerucella luteola* on, in Austria, 324; pests of, in Britain, 58, 65; restrictions on importation of, into Britain, 356; *Alsophila pometaria* on, in Canada, 662-664; *G. luteola* on, in France, 324; pests of, in Holland, 269, 396; pests of, in Japan, 443, 618; *Eriosoma lanuginosum* on, in Tasmania, 20; pests of, in U.S.A., 28, 68, 69, 77, 78, 81, 132, 138, 144, 190, 324, 378, 418, 420, 427, 429, 499, 529, 532, 644, 649; bark-beetles and *Ophiostoma ulmi* on, 65, 68, 77, 138, 180, 378, 396, 529, 645; age and species of, in relation to *O. ulmi*, 66; *Pyrausta nubilalis* experimentally fed on, 229; lead arsenate causing injury to, 532.
- Elm Bark-beetles (see *Hylastes rufipes* and *Scolytus multistriatus*).
- Elm Leaf Beetle (see *Galerucella luteola*).
- Eloeidiphilus aliberti*, bionomics and control of, on oil palms in Dahomey, 349.
- elongatus*, *Telenomus* (*Phanurus*) *beneficiens*.
- Eloria noyesi*, on *Erythroxylon coca* in Peru, 165.
- elutella*, *Ephestia*.
- emarginata*, *Calpe* (*Oraesia*).
- Emmalocera depressella*, on sugar-cane in India, 558, 559, 577; effect of infestation by, on sugar-cane varieties, 558, 559.
- Emmelia trabealis*, on ramie in Transcaucasia, 587.
- Empoasca*, factors affecting attacks of, on cotton in Queensland, 281; characters of species of, allied to *E. fabae* in U.S.A., 83; measures against, 281.
- Empoasca abrupta*, in California, 83; shown to be distinct from *E. fabae* 93.
- Empoasca biguttula*, on cotton in Manchuria, 340.
- Empoasca fabae*, in U.S.A., 53, 70, 71, 82, 83, 421, 595; on beans, 82, 83, 595; on potato, 53, 70, 71, 421; bionomics of and species allied to, 82, 83; *E. abrupta* distinct from, 83; measures against, 53, 70, 71, 421, 422, 595.
- Empoasca fabalis*, measures against, on lima beans in Porto Rico, 501.
- Empoasca filamenta*, not transmitting potato viruses in Oregon, 84.
- Empoasca flavescens*, on tobacco in Japan, 210.

- Empoasca lybica*, associated with "crazy top" on cotton in Sudan, 574.
- Empoasca terrae-reginae*, on cotton in Queensland, 281.
- Empoasca viridigrisea*, on tomato in Queensland, 281.
- Empusa*, infesting *Dysdercus* spp. in Brazil, 86.
- Empusa grylli*, infesting locusts in S. Africa, 91, 92; infesting grasshoppers in U.S.A., 75, 427; studies and attempted utilisation of, 92, 427.
- Enaria melanictera*, parasite of, in Madagascar, 611.
- Enarmonia caryana* (Hickory Shuckworm), bionomics of, in U.S.A., 377.
- Enarmonia diniana*, bionomics of, on larch in Switzerland, 169.
- Enarmonia minutana*, on poplar and willow in Morocco, 196.
- Enarmonia prunivora*, measures against, on apple in Quebec, 664.
- Encarsia formosa* (parasite of *Trialetodes vaporariorum*), utilisation of, in Britain, 333, 437.
- Encarsia partenopea*, probably imported into Britain in pupae of *Aleurodes brassicae* from Italy, 265.
- Encarsia tricolor*, probably imported into Britain in pupae of *Aleurodes brassicae* from Italy, 265.
- endogena*, *Polyodaspis*.
- Endrosis lacteella*, eggs of, 49.
- Engytatus geniculatus*, predacious on *Protoparce sexta* in Florida, 251.
- Enicospilus antancarum*, parasite of *Diatraea venosata* in Mauritius, 611.
- Enicospilus purgatus*, parasite of cutworms in Florida, 657.
- Enneadesmus forficula* subsp. *capensis*, in S. Africa, 60.
- Enneapogon brachystachys*, relation of *Locustana pardalina* to, in S. Africa, 394.
- Entedon auronitens* var. *turcicus*, n., parasite of *Lithocolletis platani* in Turkey, 219.
- Entedon pempheridis*, sp. n., parasite of weevils in India, 506.
- Entomology, books on, 170, 455; preparation of papers on, 138. (See Economic Entomology.)
- Entomoscelis adonidis*, on crucifers in Russian Union, 439.
- Ephestia*, suitability of, as host for *Trichogramma evanescens*, 36.
- Ephestia calidella*, measures against, in dates in Egypt, 506.
- Ephestia cautella*, sources of infestation of stored cacao by, in Ceylon, 638; in dates in Egypt, 506; parasite of, in copra in Fiji, 213; mass rearing of *Trichogramma japonicum* on, in Japan, 619; measures against, 506, 638.
- Ephestia elutella*, in Britain, 154; bionomics of, in Ceylon, 638; in Germany, 521; in S. Rhodesia, 125; in stored tobacco, 125, 154; in other stored products, 154, 521, 638; measures against, 125, 154, 521, 638.
- Ephestia figulilella*, measures against, in dates in Egypt, 506.
- Ephestia kuehniella* (in stored products), in Britain, 391, 521; in Germany, 400; in Italy, 172; in Russian Union, 685; in U.S.A., 80; bionomics of, 399; determination of food requirements of, 64, 65; natural enemies of, 264, 265, 400, 521; adaptation of *Chelonus annulipes* to, 80; suitability of, as host for *Trichogramma* spp., 35, 391, 589; measures against, in flour mills, 400, 685.
- Ephialtes argentinus* (parasite of *Cydia molesta*), bionomics and suggested utilisation of, in Argentina, 601, 602.
- Ephialtes dimorphus*, sp. n., parasite of *Platyedra gossypiella* in Brazil, 86.
- ephippella*, *Argyresthia*.
- Epibootania* (see *Megastigmus*).
- Epicauta gorhami*, measures against, in China, 451.
- Epicometis hirta* (*hirtella*), on rape in Czechoslovakia, 468.
- Epidiaspis leperii*, measures against, on pear in Italy and California, 297, 432; temperature affecting efficiency of tar distillates against, 467.
- Epilachna varivestis* (Mexican Bean Beetle), in U.S.A., 69, 421, 595, 599; application of bioclimatics to study of, 327; measures against, 421, 595; tests of insecticides on, 69, 78.
- Epilachna vigintioctomaculata*, on tobacco in Japan, 210; bionomics of, in Korea, 362; on potato in Manchuria, 340, 361.
- Epilachna vigintioctopunctata*, on solanaceous plants in Fiji, 641.

- Epimadiza hirta*, on gladiolus in S. Rhodesia, 125.
- Epimegastigmus* (see *Megastigmus*).
- Epinotia meritana*, in Br. Columbia, 568; outbreak of, on *Abies* in Utah, 567; on pine, 568.
- Epitetranychus* (see *Tetranychus*).
- epitricis*, *Perilitus*.
- Epitrimerus myersi*, sp. n., on avocado in California, 288.
- Epitrimerus pirifoliae*, sp. n., on pear in California, 33.
- Epitrix cucumeris*, measures against, on potato and tobacco in U.S.A., 70, 71, 177, 342; bionomics of, 342.
- Epitrix parvula*, on egg-plant in Jamaica, 239; on tobacco and potato in U.S.A., 254, 342, 380; bionomics and control of, 342, 380.
- Epitrix subcrinita*, not transmitting potato viruses in Oregon, 84.
- Epiurus* (see *Pimpla*).
- Epsom Salts (see Magnesium Sulphate).
- equestris*, *Haplodiplosis* (*Clinodiplosis*); *Lygaeus* (*Spilostethus*); *Merodon*.
- Eragrostis*, relation of *Locustana pardalina* to, in S. Africa, 394; *Nymphula depunctalis* on, in Philippines, 364.
- Erannis* spp., in Crete, 171, 172; in Poland, 438; bionomics of, 172, 438; measures against, on olive, 172.
- Erannis aurantiaria*, 438.
- Erannis balaria*, *sorditaria* not considered a form of, 171, 172.
- Erannis defoliaria*, 438.
- Erannis leucophaea*, *sorditaria* considered a form of, 172.
- Eranthemum*, *Doleschallia bisaltide* on, in Fiji, 641.
- eremita*, *Conomorium*.
- erichsoni*, *Pristiphora* (*Lygaeonematus*, *Nematus*).
- eridania*, *Xylomyges* (*Prodenia*).
- Eriobotrya japonica* (see Loquat).
- Eriocampoides* (see *Caliroa*).
- Erionota thrax*, on coconut and banana in Philippines, 451.
- Eriophyes*, on cotton in India, 128.
- Eriophyes avellanae*, on hazel in Greece, 452.
- Eriophyes carinatus*, on tea in India, 128.
- Eriophyes fici*, on figs in California, 34; question of identity of, 34.
- Eriophyes ficus*, *E. fici* possibly identical with, 34.
- Eriophyes hibisci*, on *Hibiscus* in Fiji, 641.
- Eriophyes lycopersici*, sp. n., on tomato in Morocco, 636.
- Eriophyes pyri*, bionomics and control of, on pear in California, 409.
- Eriophyes ribis*, measures against, on black currant in Britain, 2.
- Eriophyes sheldoni*, measures against, on *Citrus* in California, 55.
- Eriophyes vitis* (on grape-vine), measures against, in Australia, 164, 365; in Russian Union, 403.
- Eriophyids, key to subfamilies and genera of, 288.
- Eriosoma lanigerum* (Woolly Apple Aphis), in Britain, 236, 237; in Cyprus, 271; in Denmark, 117; in Egypt, 127; resistance of, to abnormal cold in France, 622; in Germany, 117; in India, 577; in Yugoslavia, 10; in Manchuria, 340; bionomics of, in New Zealand, 548-550; in Palestine, 127; in Poland, 162; in S. Rhodesia, 125; in Russian Union, 588; in Tasmania, 20; in Virginia, 141; susceptibility of varieties of apple to, 100, 141; utilisation of *Aphelinus mali* against, 10, 20, 117, 127, 163, 271, 548-550, 588; spraying against, 20, 236, 237, 549, 550.
- Eriosoma lanuginosum*, on elm in Tasmania, 20; not recorded on pear, 20.
- Eriosoma ulmi japonicum*, susceptibility of varieties of elm to, in Japan, 443.
- Eritrea (see Africa, Italian East).
- Erromenus simplex*, parasite of spruce sawflies in Czechoslovakia, 518.
- eruditus*, *Cheyletus*.
- Erythmelus psallidis*, parasite of *Psallus seriatus* in U.S.A., 381, 538; bionomics of, 538.
- erythrocephala*, *Acantholyda*.
- erythrogaster*, *Campsomeris*; *Stylocryptus*.
- Erythroneura pallidifrons*, parasite and control of, on greenhouse plants in Britain, 115.
- Erythroneura parvula*, on vines in Russian Union, 403.
- Erythroxydon coca*, *Linoclostis gonatias* on, in Formosa, 447; *Eloria noyesi* on, in Peru, 165.
- Estigmene acraea*, food-plants of, in Oklahoma, 340.

- Estola attenuata*, on egg-plant in Jamaica, 239.
- Ether, as a solvent, 142.
- ethlius*, *Calpodes*.
- Ethyl Alcohol (see Alcohol).
- Ethylene Dichloride, emulsions of, against *Aegeria exitiosa* and *Naupactus leucoloma*, 255, 378, 526; and carbon tetrachloride, against pests of stored cereals and plant material, 120, 184, 341, 378, 539; sometimes causing injury to peach, 256; other fumigants compared with, 256, 539.
- Ethylene Oxide (as a fumigant), against pests of chestnuts, 359; resistance of strains of *Aonidiella aurantii* to, 343; curves for expressing toxicity of, to insects, 111; vacuum fumigation with, 359, 605; and carbon dioxide, 359; causing injury to azaleas, 605.
- Etiella behri*, on *Cajanus cajan* in Seychelles, 335.
- Etiella zinckenella* (on leguminous plants), in Iberian Peninsula, 495; in India, 129; in Japan, 556; in Porto Rico, 382, 435, 502; in Russia, 152; in U.S.A., 381; attacking watermelons, 152; parasites and biological control of, 381, 382, 495; alternative host of parasites of lac predators, 129; measures against, 435.
- Euacanthus interruptus*, on hops in Britain, 333.
- Euarabis* (see *Arabis*).
- Euaresta aequalis*, introduced into Australia against *Xanthium pungens*, 546.
- Eublemma*, damaging teak seed in Burma, 693.
- Eublemma amabilis* (predacious on *Laccifer lacca*), parasites and biological control of, in India, 128, 129, 575; longevity of, 128.
- Eucalyptus*, pests of, in Nyasaland, 126; Coleoptera in timber of, in S. Africa, 60; termite in wharf timber of, in Fiji, 212.
- Eucalyptus* Oil, spraying with, against *Erythroneura pallidifrons*, 115.
- Eucelatoria comosa*, parasite of cutworms in Florida, 657.
- Euchlora viridis* (see *Anomala*).
- Eucosma ocellana* (see *Spilonota*).
- Eucosma schistaceana*, natural enemies and biological control of, (1875)
- on sugar-cane in Formosa, 363, 364, 447.
- Eudeleboea lopezi*, parasite of *Cydia molesta* in Argentina, 602.
- Euderus pempheriphila*, parasite of *Pempheres affinis* in India, 506.
- Euethiola rugiceps*, time of planting maize in relation to, in Arkansas, 178.
- Eugenia aromatica* (see Clove Tree).
- Eugenia edulis*, *Timocratica haywardi* on, in Argentina, 188.
- Eugenia jambolana*, *Xylocopa* spp. in timber of, in India, 337.
- Eugenia uniflora* (*micheli*), *Dacus passiflorae* on, in Fiji, 212.
- Eulecanium* (see *Lecanium*).
- Eulia citrana*, in California, 649; dinitro-o-cyclohexylphenol toxic to, 649.
- Eulia mariana*, measures against, on apple in Nova Scotia, 662.
- Eulia politana*, parasites of, on ramie in Transcaucasia, 587.
- Eulimneria rufifemur*, olfactory responses of, to food-plant of host in Britain, 391.
- Eulophus*, parasite of *Sylepta derogata* in Japan, 557.
- Euonymus*, *Aphis fabae* on, in Britain and Germany, 674, 686.
- Eupelmella pedatoria*, sp. n., parasite of weevils in India, 506.
- Eupelmus*, hosts of in Japan, 211, 212.
- Eupelmus allyni*, emergence holes of, indicating infestation of wheat by *Mayetiola destructor* in Kansas, 375.
- Eupelmus flavicallus*, bionomics of, in Australia, 545.
- Eupelmus terminaliae*, sp. n., parasite of *Lasiocampid* in India, 385.
- Eupelmus urozonus*, parasite of *Pempheres affinis* in India, 506.
- Eupeodes volucris* (predacious on *Macrosiphum onobrychis*), duration of early stages of, in Utah, 30.
- Euphorantha dysderci* (see *Hyalomymia*).
- Euphranta*, parasites of, on cherry in Japan, 338, 620.
- Euphyllura olivina*, on olive in Cyprus, 270.
- Euplectrus*, parasite of *Laphygma exempta* in Nyasaland, 126.
- Euplectrus agaristae* (parasite of *Phalaenoides glycinae*), morphology and bionomics of, in New South Wales, 293.
- Euplectrus platyhyphenae*, 126.

- euploeae*, *Brachymeria*.
Eupristina verticillata (pollinating *Ficus retusa*), introduction of, into Hawaii, 367.
Euproctis chrysorrhoea, auct. (see *Nygmia phaeorrhoea*).
Eupteromalus, parasite of *Nygmia phaeorrhoea* in Holland, 205.
Eupteromalus nidulans, parasite of *Hormius* in Morocco, 193.
Eupteromalus viridescens, parasite of *Apanteles congregatus* in Tennessee, 254.
Eurhizococcus brasiliensis, on vines in Brazil, 34.
Europe, Tetranychid mites of, 301.
Eurydema, on crucifers in Russian Union, 439.
Eurydema oleraceum, ecology of, attacking cereals in Germany, 631.
Eurydinota lividicarpus, parasite of *Coleophora pruniella* in Oregon, 643.
Eurydinoteloides gahani, sp. n., parasite of *Tyloclerema brassicae* in Brazil, 183.
Eurydinoteloides montei, sp. n., parasite of *Callabismodes tabaci* in Brazil, 183.
Eurygaster (on cereals), in Germany, 352; in Poland, 403; type of injury by, 352, 554; measures against, 353, 555.
Eurygaster integriceps, on cereals in Russia, 554; parasite of, 555.
Eurygaster maura, bionomics of, on cereals and grasses in Germany, 63, 64, 632.
Eurytoma denticoxa (see *E. nesiotes*).
Eurytoma fellis (Citrus Gall Wasp), Torymid parasites of, in New South Wales, 564-566.
Eurytoma monemae, synonymy of, 434.
Eurytoma nesiotes, synonymy of, 434.
Eurytoma parasae (see *E. monemae*).
Eurytoma pistaciae, bionomics of, on pistachio in Greece, 452, 453.
Eurytoma promecothecae, sp. n., parasite of *Promecotheca papuana* in New Guinea Territory, 506.
Eurytoma saliciperdae, possibly parasitic on *Rhabdophaga saliciperda* in Britain, 628.
Eurytoma samsonovi, on fruit trees in India, 503.
Euscepes postfasciatus (*batatae*), synonymy of, 595.
Euschistus impictiventris; and boll rots in cotton in Arizona, 416, 417.
Eusemion, key to species of, 40.
Eutachina mungomeryi, sp. n., parasite of *Laphygma exempta* in Queensland, 263.
Eutane terminalis, on grasses in New South Wales, 329.
Eutelid blandiatrrix, on *Altingia excelsa* in Java, 227.
Eutelus, parasite of *Phytomyza ilicis* in Britain, 669.
Eutelus kojimae, sp. n., parasite of *Dendrolimus spectabilis* in Japan, 91.
Eutelus subfumatus, parasite of *Diprion* spp. in Poland, 232, 671.
Eutelus tabatae, sp. n., parasite of *Dendrolimus albolineatus* in Sakhalin, 91.
Eutermes, in Australia, 545.
Eutermes costalis, bionomics and control of, damaging plants and timber in Porto Rico, 464, 465.
Eutermes exitiosus, in Australia, 89, 282, 545; methods of testing resistance of timber to, 545; environment in mounds of, 89, 282.
Eutermes olidus, in Fiji, 641.
Eutermes ripperti, damaging damp timber in Jamaica, 239.
Eutetrappa metallescens, on *Quercus mongolica* in Russian Far East, 42.
Eutetrappa sedecimpunctata, on *Tilia amurensis* in Russian Far East, 42.
Eutettix tenellus (Beet Leafhopper), in U.S.A., 286, 409, 412, 593, 596; experiments with curly-top of beet and, 286, 412; on spinach, 594; breeding areas, ecology and migrations of, 286, 593; new varieties of *Pipunculus* parasitic on, 596; measures against, 287, 412.
Eutochia lateralis, on potato in Hawaii, 367.
Eutrichopoda abdominalis, parasite of *Dysdercus* in Brazil, 22.
Eutrombidium locustarum, attacking grasshoppers in U.S.A., 75, 376; bionomics of, 376.
Euxesta stigmatias, measures against, on maize in Porto Rico, 328; bionomics and distribution of, 328.
Euxoa detera personata, baits for, on beans in Wisconsin, 32.

Euxoa messoria, bait for, on tobacco in Connecticut, **178**.
Euxoa segetum (see *Agrotis*).
Euzophera punicaeella, bionomics of, in Baluchistan, **51**.
evanescens, *Trichogramma*.
Evergestia rimosalis, on cabbage in Louisiana, **250**.
Evetria (see *Rhyacionia*).
ewingi, *Persectania*.
examinator, *Pimpla*.
exaptus, *Systates*.
excarinata, *Brachymeria*.
exempta, *Laphygma* (*Spodoptera*).
Exenterus abruptorius, introduction of, against *Diprion polytomum* in Canada and U.S.A., **276, 381**.
Exenterus adpersus, introduction of, against *Diprion polytomum* in Canada and U.S.A., **369, 381**.
Exenterus laricinus, parasite of *Diprion similis* in Poland, **671**.
Exenterus marginatorius, parasite of *Diprion similis* in Poland, **671**.
Exeristes (see *Pimpla*).
Exeristesoides (see *Pimpla*).
exigua, *Hyposoter*; *Laphygma*.
exitiosa, *Aegeria* (*Conopia*).
exitiosus, *Eutermes*.
Exochomus flavipes, attacking Coccids in Seychelles, **335**; establishment of, in Mahé, **335**.
Exochomus quadripustulatus, predacious on *Chermes* spp. in Britain, **262, 263**; proposed introduction of, into Australia, **263**.
Exochomus ventralis, establishment of, against Coccids in Seychelles, **335**; *Technomyrmex* hindering breeding of, **335**.
Exora apicipennis, on *Crotalaria juncea* in S. Rhodesia, **125**.
Exora discoidalis, food-plants of, in S. Rhodesia, **124, 125**.
Exorista (see *Zenillia*).
expansa, *Anomala*.
Experimental Data, analysis of, **65, 66, 240, 242, 243**.

F.

fabae, *Aphis* (*Doralis*); *Empoasca fabalis*, *Empoasca*.
fabia, *Earias*.
fabricator, *Ichneumon*.
facialis, *Catascopus*.
fagi, *Contarinia*; *Phyllaphis*.
fagicola, *Dasyneura*.
Fall Cankerworm (see *Alsophila pometaria*).
Fall Webworm (see *Hyphantria cunea*).

farinae, *Tyroglyphus*.
fascialis, *Hymenia* (*Zinckenia*) (see *H. recurvalis*).
fasciata, *Lophosia*.
fasciatipennis, *Coloborhombus*.
fasciatus, *Aeolothrips*; *Dysdercus*; *Hervothrips* (*Heliothrips*); *Silvanus*.
fasciculatus, *Araecerus*.
fastuosa, *Chrysomela*.
fatigans, *Culex*.
fedorovi, *Taeniothrips*.
fellis, *Eurytoma*.
Feltia annexa, on cabbage and sugar-cane in U.S.A., **250, 657**; parasites of, **657**.
Feltia ducens, measures against, on lucerne in Wisconsin, **32**.
Feltia malefida, parasites of, on sugar-cane in Florida, **657**.
Feltia segetum (see *Agrotis*).
femoralis, *Creontiades*; *Tychius*.
femorata, *Chrysobothris*.
femur-rubrum, *Melanoplus*.
fenestralis, *Angitia*.
Fennel (*Foeniculum*), new Aphid on, in California, **590**; *Thrips tabaci* on, in Crimea, **43**.
Fenusa pusilla, weight of foliage in relation to, **143**.
ferganensis, *Rhynchites auratus*.
Ferns, *Calopistria floridensis* on, in greenhouses in Canada and U.S.A., **592**.
Ferrisiana virgata, new parasite of, on coffee in Kenya, **40**.
Ferrous (Iron) Sulphate, uses of, in sprays, **460, 662, 681**; increasing risk of injury to *Citrus* by lime-sulphur, **460**.
ferruginea-striata, *Aphis*.
ferrugineus, *Dacus* (*Chaetodacus*, *Strumeta*); *Laemophloeus*.
ferus, *Nabis*.
Fescue (see *Festuca*).
festina, *Stictocephala*.
festiva, *Chlorida*; *Poecilonota*.
Festuca spp., new Cecidomyiid on, in Britain, **635**; Pentatomid cereal pests on, in Germany, **63, 631**; *Pediculopsis graminum* on, in Russian Union, **151**.
festucae, *Dasyneura*.
fici, *Eriophyes*; *Tetranychus*.
ficifoliae, *Rhyncaphytoptus*.
Ficus, new Eriophyid on, in California, **288**; Coccids on, in Egypt, **509**.
Ficus benjamina, Aleurodids on, in Trinidad, **25**.
Ficus carica (see Fig).

- Ficus retusa*, *Anomala expansa* on, in Formosa, **363**; Agaonid introduced into Hawaii to pollinate, **367**.
- ficus*, *Chrysomphalus*; *Eriophyes*.
- Field Plots, co-ordination of experiments in, **240, 242, 245, 340, 417**.
- Fig, mite on, in California, **34**; *Ceratitidis capitata* on, in France, **195**; *Tetranychus fici* on, in India, **128**.
- Fig (Fruit), *Lonchaea aristella* intercepted in, in Russian Union, **440**; (dried), pests in, in Germany, **201, 230**; uses of, in baits for Trypetids, **98, 270**.
- figulilella*, *Ephestia*.
- Fiji, miscellaneous pests in, **212, 213, 366, 641**; bunchy-top of banana in, **213**; natural enemies and biological control of insect pests in, **19, 22, 212, 213, 366, 605, 641**; introduction of insect enemies of nutgrass into, **367**; introduction of beneficial insects into other countries from, **212, 238, 365, 366, 641**.
- fijiensis*, *Biosteres* (*Opius*).
- filamenta*, *Empoasca*.
- filamentosus*, *Pseudococcus*.
- fimetarius*, *Phalacrus*.
- Finland, thrips on *Alopecurus* in, **160**; *Diarthronomyia* on chrysanthemum in, **673**; *Melolontha hippocastani* in, **267**; *Pissodes* spp. and their parasites in, **8**; Coleopterous fauna of potato storage cellars in, **392**; Indian Coleoptera in timber from **465**; entomological publications in, **694**.
- Fir, Douglas (see *Pseudotsuga taxifolia*).
- Fir, Silver (see *Abies*).
- fiscellaria*, *Ellopia*.
- Fish, destroying *Nymphula vittalis* in Korea, **619**; insecticides toxic to, **3, 136, 514**; (dried or salt), Coleoptera feeding on, **513, 584**.
- Fish Oil, as an adhesive and spreader for sprays, **52, 53, 74, 177, 189, 380, 383, 430, 525, 540, 645**; as an adhesive for cryolite dips, **652**; emulsions of, unsatisfactory against whiteflies, **530**; formulae containing, **52, 53, 74, 177, 380, 383, 430, 530, 540**; types of, **430, 525**.
- Fish-oil Soap (see Soap, Fish-oil).
- flabellicornis*, *Hylecoetus* (*Hylecerus*).
- Flamboyant (see *Poinciana*).
- Flame-throwers, against grasshoppers and locusts, **214, 479**; suggested against *Rhytidoderes plicatus*, **621**.
- flammea*, *Panolis*.
- flandersi*, *Tropidophryne*.
- flava*, *Cosmophila* (*Anomis*); *Hoplocampa*; *Sipha*.
- flaveola*, *Scaptomyza*.
- flavescens*, *Empoasca* (*Chlorita*); *Monema* (*Cnidocampa*); *Phalera*.
- flavicallus*, *Eupelmus*.
- flavicauda*, *Sphaerophoria*.
- flavicornis*, *Sphegigaster*.
- flavipes*, *Apanteles*; *Apion*; *Exochomus*.
- flaviscutellaris*, *Cyrtomorpha*.
- flavisignatum*, *Monaloniion*.
- flaviventris*, *Cremastus*; *Neurotoma*.
- flavolineata*, *Mettriona*.
- flavolineatus*, *Bolax*.
- flavo-orbitalis*, *Cremastus*.
- flavus*, *Tychius*.
- Flax (Linseed), grasshopper damaging, in Argentina, **214**; *Plusia orichalcea* on, in Bengal, **577**; *Thrips* spp. on, in Holland, **233, 234, 465**; survey of pests of, in Poland, **350**; effect of infestation by flea-beetles on yield of, in Russia, **684**; pests of, in U.S.A., **180, 652**; possible translocation of derris in, **234**; pests in stored seed of, **173, 319, 521**; insects infesting house insulation material containing, **640**.
- Flea-beetle, Hemp (see *Psylliodes attenuata*).
- Flea-hopper, Cotton (see *Psallus seriatus*).
- Fleas, grain mites spread by, in Russian Union, **552**.
- fletcheri*, *Opius*.
- Flit, tests of penetration of, into tracheae of insects, **580**.
- floccifera*, *Pulvinaria*.
- floralis*, *Hylemyia* (*Chortophila*); *Nemorilla*.
- floricolus*, *Tarsonemus*.
- Florida, pests of *Citrus* in, **256, 257, 258, 259**; cotton pests in, **242, 247**; *Anticarsia gemmatilis* on soy beans in, **371**; sugar-cane pests in, **656-659**; Aphids transmitting sugar-cane mosaic in, **658**; tobacco pests in, **251, 599**; vegetable pests in, **249, 287, 600**; legislation against *Naupactus* spp. in, **275**; beneficial insects and biological control in, **143, 251, 261, 461, 656, 657, 658, 659**;

- parasite of *Apanteles congregatus* in, 254; climatic conditions unfavourable to *Ceratitis capitata* in, 327.
- floridanus*, *Horismenus*.
- floridensis*, *Callopietria*.
- Flour, pests in, and their control, 27, 52, 64, 65, 173, 175, 223, 234, 319, 350, 378, 399, 400, 513, 584, 612, 640, 685; nutritive value of types of, for pests, 64, 65, 173, 175; method for determining movement of *Tribolium confusum* in, 52; effect of injury to grain by Pentatomids on quality of, 353, 554; effect of grain fumigants on, 319; in baits, 127, 240; as carrier and adhesive for dusts, 185, 367, 371, 674; in repellent paint against *Chrysobothris*, 420.
- Flour Beetle (see *Tribolium*).
- Flour Mills, pests in, and their control, 8, 162, 400, 685.
- Flour Mite (see *Tyroglyphus farinae*).
- Flour Moth (see *Ephestia kuehniella*).
- Flower Thrips (see *Frankliniella moultoni*).
- fluctuata*, *Cidaria*.
- Fluorine Compounds, problems of residues of, on fruit and vegetables, 104, 432, 595, 648; penetration of leaves by, 309; review of use of, as insecticides, 456.
- Foeniculum* (see Fennel).
- Foliage, weight of, in relation to insect control, 143.
- foliata*, *Membracis*.
- Fomes annosus*, 504.
- forbesi*, *Cerosipha* (*Aphis*).
- Forest Ant, Red (see *Formica rufa*).
- Forest Entomology, book on, 527; recent literature on, 160.
- Forest Tent Caterpillar (see *Mala-cosoma disstria*).
- Forests, pests of, in Algeria, 226; pests of, in Australia, 20, 21, 185, 262, 545, 546, 602; *Galerucella luteola* in, in Austria, 324; pests of, in Britain, 58, 65, 262, 295, 391; pests of, in Burma, 612, 692, 693; pests of, in Canada, 25, 53, 275, 276, 368, 369, 381, 382, 463, 540, 647, 662-664; Longicorns in, in Ceylon, 612; pests of, in China, 360, 449, 451, 614; new Coccid in, in Corsica, 235; pests of, in Czechoslovakia, 468, 469, 517, 518, 564; *Diprion pini* in, in Danzig Territory, 105, 397; new *Matsucoccus* in, in Dominican Republic, 392; pests of, in Finland, 8, 267; pests of, in France, 225, 226, 235, 324; pests of, in Germany, 7, 48, 65, 98, 101, 105, 170, 204, 216-218, 230, 231, 298, 299, 334, 335, 353, 354, 397, 398, 399, 400, 401, 466, 512, 521, 522, 563, 579, 580, 581, 607; suggestions for protection of *Formica rufa* in, in Germany, 231; pests of, in Holland, 269, 396; pests of, in India, 224, 612; pests of, in Netherlands Indies, 227, 385, 577, 578; comparison between gambier plantations and, in relation to pests in Sumatra, 385; pests of, in Italy and Sicily, 516, 522; pests of, in Japan, 19, 91, 209, 211, 339, 441, 443, 615; *Dioryctria peyerimhoffi* in, in Morocco, 58; *Hylastes ater* in, in New Zealand, 504; pests of, in Nyasaland, 126; pests of, in Poland, 9, 162, 350, 398, 399, 401, 438, 670, 676; pests of, in Rumania, 355; pests of, in Russian Union, 42, 43, 147, 153, 456, 474, 680, 681, 682; pests of, in Sakhalin, 19, 91, 339, 615; pests of, in Sweden, 122, 123; pests of, in Switzerland, 169, 517; pests of, in Turkey, 218; pests of, in U.S.A., 28, 32, 53, 67, 68, 69, 73, 74, 77, 78, 132, 138, 140, 144, 170, 176, 177, 190, 279, 284, 324, 329, 342, 368, 369, 374, 377, 378, 382, 392, 418, 420, 427, 429, 434, 461, 498, 499, 528, 529, 530, 532, 533, 540, 546, 567, 568, 599, 600, 644, 645, 647, 649, 651; possibilities of aeroplane dusting and biological control in, 170, 514.
- Forficula auricularia*, in Ontario, 601; bionomics and control of, in Tasmania, 510; plants attacked by, 510, 601; liberation of *Bigonicheta setipennis* against, in U.S.A., 379.
- forficula*, *Enneadesmus*.
- Formica*, measures against, in Russia, 44.
- Formica rufa*, utilisation of, in forests in Germany and Czechoslovakia, 231, 564.
- formicarius*, *Cylas*.
- Formosa, fruit pests in, 205, 206, 363, 557; miscellaneous pests in, 363, 558, 618; sugar-cane pests in, 206, 339, 363, 364, 444, 446, 447; soil insects in sugar-cane fields in, 206, 446; pests of tea

- in, **339, 340, 447**; ants of, **446**; Aphids producing tannin galls in, **205**; new Coccid on *Arundinaria* in, **103**; locusts in, **486**; *Bruchus rufimanus* not occurring in, **208**; beneficial insects and biological control in, **205, 363, 364, 447, 558**; parasite of Coccinellids in, **618**; *Rodolia cardinalis* introduced into Japan from, **446**; risk of introduction of *Dacus* spp. into Japan from, **615**.
- formosa*, *Encarsia*.
- formosae*, *Aserica* (*Autoserica*).
- formosana*, *Gryllotalpa*.
- formosanus*, *Cardiophorus* (*Platynychus*); *Coptotermes*.
- formicatus*, *Xyleborus*.
- Fornicia*, parasite of *Setora nitens* in Java, **347**.
- foveolata*, *Tyloderma*.
- Fowls, destroying noxious insects, **253, 377, 557, 608**.
- fractus*, *Melanoxanthus*.
- fragariae*, *Capitophorus*; *Tarsonemus* (see *T. pallidus*); *Tyloderma*.
- fragilis*, *Malacosoma*.
- France, Cecidomyiid on *Aira flexuosa* in, **635**; weevils on artichokes in, **357**; pests of chestnuts in, **358**; *Phloeosinus* spp. on conifers in, **225, 226**; pests of crucifers in, **167, 458, 459, 621, 622**; *Pseudococcus citri* on orange in, **266**; orchard pests in, **168, 195, 357, 390, 622, 689**; pests of ornamental plants in, **268, 623, 689**; vine moths in, **155**; *Carpophilus hemipterus* in, **167**; new Coccids in, **103, 235**; Corynetines of, **584**; *Leptinotarsa decemlineata* in, **106, 107, 169, 194, 349, 350, 357, 583, 584, 622, 634, 675**; beneficial insects and biological control in, **107, 194, 266, 629**; certification of insecticides in, **675**; introduction of beneficial insects into other countries from, **282, 324**; legislation against introduction of pests into other countries from, **11, 356, 358**.
- frangulae*, *Aphis* (*Doralis*).
- Frankliniella*, transmitting disease of tobacco in S. Africa, **360**.
- Frankliniella fusca*, food-plants of, in U.S.A., **177, 372**; measures against, **177**.
- Frankliniella insularis*, measures against, on banana in Haiti, **289**; transmission of spotted wilt by, **546**.
- Frankliniella intonsa*, bionomics of, on wheat in Sweden, **121**.
- Frankliniella moultoni*, on *Citrus* in California, **433**; characters distinguishing *Scirtothrips citri* and, **433**.
- Frankliniella tenuicornis*, bionomics of, on wheat in Sweden, **121**.
- Frankliniella tritici*, food-plants of, in U.S.A., **142, 372, 413**; effect of, on yield of cotton, **413**; trapped by leaves of tomato, **142**.
- fraterculus*, *Anastrepha*.
- Fraxinus* (see Ash).
- frenchi*, *Coptotermes*; *Lepidiota*.
- frischi*, *Anomala dubia*; *Dermestes*.
- frit*, *Oscinella* (*Oscinis*).
- froggatti*, *Haplothrips*; *Typhlocyba*.
- Frogs, destroying noxious insects, **407, 452**; possibility of utilising, in Philippines, **452**; damaging trap-ditches in beet fields, **407**.
- frontalis*, *Dendroctonus*.
- frugiperda*, *Laphygma*.
- Fruit (Dried), pests in, and their control, **64, 154, 167, 173, 201, 225, 230, 521, 584**.
- Fruit-flies (see Trypetids).
- Fruit-fly, Cherry (see *Rhagoletis cerasi*).
- Fruit-fly, Mediterranean (see *Ceratitis capitata*).
- Fruit-fly, Melon (see *Dacus cucurbitae*).
- Fruit-fly, Olive (see *Dacus oleae*).
- Fruit-fly, Queensland (see *Dacus ferrugineus tryoni*).
- frutetorum*, *Diprion*.
- fullo*, *Polyphylla*.
- fulvicornis*, *Hoplocampa* (see *H. minuta*).
- fulvipes*, *Ichneutes*.
- fulvoguttata*, *Melanophila*.
- fulvum*, *Stromatium*.
- fumiferana*, *Harmologa*.
- Fumigants, methods of testing and comparing, **111**; new type of, **198, 199**; types of equipment for using, **53, 54, 174, 260, 272, 605**.
- Fundella cistipennis*, measures against, on lima beans in Porto Rico, **435**.
- funebrana*, *Cydia* (*Grapholitha*, *Laspeyresia*).
- funestus*, *Lagochirus*.
- Fungi, *Tinea secalella* on dried, in Germany, **220**; list of animals associated with edible, **511**. (See Mushrooms.)

Fungi, Entomogenous, 8, 9, 32, 39, 75, 86, 91, 92, 100, 105, 118, 144, 173, 258, 300, 302, 306, 307, 308, 333, 368, 392, 427, 455, 470, 471, 496, 501, 504, 578, 587, 608, 625, 629, 660, 666, 677, 684, 688.

Fungi, Injurious, 20, 71, 72, 101, 124, 138, 164, 181, 204, 219, 269, 348, 358, 359, 422, 425, 427, 437, 491, 495, 504, 522, 541, 544, 562, 568, 584, 628, 630, 664, 693; relation of insects to, 61, 62, 65, 68, 77, 186, 222, 242, 284, 290, 360, 365, 378, 388, 389, 396, 401, 452, 453, 524, 527, 529, 564, 642, 645, 656, 657; relation of mites to, 79.

Fungus, Honey (see *Armillaria mellea*).

Fungus, Red Rot (see *Colletotrichum falcatum*).

furcatispinus, *Pseudococcus*.

furcifera, *Sogata*.

Furfural, synthetic compounds derived from, as insecticides, 593.

Furniture, pests in, and their control, 55, 160, 181, 237, 493, 499.

Furs, Coleoptera damaging, 47, 196, 513.

fusca, *Arcyptera* (*Stethophyma*); *Busseola*; *Frankliniella*; *Lachnosterna* (*Phyllophaga*).

fuscadinella, *Coleophora*.

fuscicornis, *Bothriophryne*; *Tremex*.

fuscilabris, *Ceratomegilla*.

fuscipenne, *Microplectron*.

fuscipunctella, *Tinea*.

fuscispinus, *Carpocoris pudicus*.

fuscus, *Anthrenus*.

fusiformis, *Byrsocrypta* (*Tetraneura*).

futilis, *Lachnosterna* (*Phyllophaga*).

G.

gahani, *Eurydinoteloides*; *Pseudococcus*.

galactinus, *Microcryptus*.

Galactites tomentosa, weevil on, in France, 357.

galactitis, *Apion* (*Ceratapion*) *carduorum*.

Galeruca tanacetii, on horse-radish in Germany, 110.

Galerucella distincta, bionomics of, on strawberry in Korea, 619.

Galerucella luteola (Elm Leaf Beetle), in Austria and France, 324; in Japan, 144; in U.S.A., 132, 144, 324, 427, 499; parasites

and biological control of, 132, 144, 324; other measures against, 428.

Galerucella nymphaeae, bionomics and control of, on *Nymphaea alba* in Italy, 3.

Galerucella xanthomelaena (see *G. luteola*).

gallarum, *Byrsocrypta*.

Galleria mellonella (Wax Moth), parasitised by *Dibrachys cavus* in Argentina and Germany, 238, 631; bionomics and fertility of, 515; effect of humidity on infection of, by *Beauveria*, 106; utilisation of bacteria isolated from, 455.

gallicus, *Doryctes*.

Galvanometer, for detecting *Sturmia* in pupae of *Bombyx mori*, 442.

Gambier (see *Uncaria gambir*).

Gambrus stokesi, parasite of *Cydia* spp. in Australia, 293, 382, 640; introduced into U.S.A., 382.

Gammaphytophys camphorae, gen. et sp. n., on *Cinnamomum camphora* in California, 288.

Gangai Disease, 577.

Gardenia, *Dialeurodes citri* on, in Virginia, 530.

Gasterocercodes brasiliensis (and var.), bionomics and control of, on cotton and *Hibiscus* in Brazil, 136.

Gasterocercodes gossypii, *G. brasiliensis* mistaken for, 136.

Gastrimargus musicus, phases of, in Australia, 545.

gei, auct., *Macrosiphum* (see *M. solanifolii*).

Gelatine, spraying with, against *Tetranychus telarius*, 583.

Gelechia cercerisella, parasites of, on *Cercis canadensis* in Kansas, 376. *gelechiae*, *Idechthis*; *Pteromalus* (see *Dibrachys cavus*).

Gelis asozanus, parasite of *Apanteles liparidis* in Japan, 211.

geminata, *Chrysomela*; *Solenopsis*.

gemma, *Chrysocharis*.

gemmatilis, *Anticarsia*.

Generation, meaning of term, 137.

geniculata, *Bucentes*.

geniculatus, *Engytatus*; *Oncocephalus*.

Genista aetnensis, *Icerya purchasi* on, in Sicily, 5.

genitalis, *Hylemyia* (*Adia*, *Phorbia*).

Geocoris decoratus, predacious on *Macrosiphum onobrychis* in Utah, 30.

Georgia (U.S.A.), cotton pests in, 242, 247, 380; Coleoptera infesting pods of leguminous plants in, 76; miscellaneous pests in, 377, 379, 657; peach pests in, 255, 623; *Heliothis armigera* in, 179; beneficial insects in, 77.

Geraniol, repellent to parasites of *Rhyacionia buoliana*, 391.

Geranium (*Pelargonium*), Coccid on, in Japan, 617.

Germany, *Aphis fabae* on beans in, 334; Pentatomids on cereals in, 63, 352, 353, 631, 632; pests of crucifers in, 110, 511; forest pests in, 6, 7, 48, 65, 98, 101, 105, 204, 216, 218, 223, 230, 231, 298, 334, 335, 353, 354, 397, 398, 400, 401, 466, 512, 521, 563, 579, 580, 581; *Contarinia medicaginis* on lucerne in, 457; orchard pests in, 46, 99, 112, 113, 114, 155, 157, 170, 297, 298, 300, 352, 398, 467, 513, 632, 633; pests of small fruits in, 100, 114, 155, 457, 466, 467; pests of ornamental plants in, 218, 267, 583; pests of stored products in, 8, 47, 102, 201, 220, 223, 224, 230, 355, 399, 400, 513, 520, 521, 582; Coleoptera damaging building timbers in, 6, 7, 110, 202, 203, 204, 268, 335, 520; vine pests in, 46, 102, 103, 111, 155, 458, 465, 496, 582, 688, 689; *Leptinotarsa decemlineata* in, 48, 100, 106, 113, 158, 160, 512, 583; *Melolontha* in, 112, 171, 299, 300, 334, 457, 495, 606-608; *Stenomalus muscarum* in houses in, 201; new Tettigoniid in, 109; Tipulids in, 519; miscellaneous pests, 223, 298, 336, 398, 606; insects and virus diseases of plants in, 156, 157, 267, 301, 333, 633, 636, 686-688; pests imported into, 218, 298, 583; beneficial insects in, 8, 64, 105, 113, 170, 217, 218, 231, 334, 335, 352, 354, 398, 400, 520, 580, 581, 608, 630, 632, 687; lists of popular names of insects in, 437; standards for calcium arsenate in, 115; *Aphelinus mali* introduced into Denmark from, 117; legislation against introduction of *L. decemlineata* into Britain from, 356.

gestroi, *Hispa*.

Geum rivale, Pentatomid on, in Germany, 632.

ghesquierei, *Pimelephila*.

Giant Palm Borer (see *Dinapate wrighti*).

Giardomyia rhododendri, sp. n., on rhododendron in New York, 499.

gibbicollis, *Hadrobregmus*.

gibbosus, *Ligyus*.

gibbus, *Bruchophagus*.

giffardi, *Dirhinus*; *Tetrastichus*.

giffardianus, *Tetrastichus*.

gigas, *Sirex*.

Gilbert Islands, Dynastid on banana and taro in, 366.

gilvus, *Macrotermes*.

Gipsy Moth (see *Lymantria dispar*).

Gladiolus, *Epimadiza hirta* on, in S. Rhodesia, 125.

glaseri, *Neoapectana*.

Glass, Ground, applied to strawberry roots against *Lachnosterna*, 425.

Glasshouse Leafhopper (see *Erythro-neura pallidifrons*).

globata, *Microgaster*.

globosa, *Cistogaster*; *Myiophasia*; *Xystrocera*.

gloveri, *Lepidosaphes*.

Glue, spraying with, against *Tetranychus telarius*, 583; as an adhesive for cryolite dips, 380, 652.

Glycerine, increasing toxicity of nicotine sulphate to eggs of *Chilo simplex*, 19; and tartar emetic, against *Scirtothrips citri*, 425.

glycinae, *Phalaenoides*.

glycinivorella, *Cydia* (*Grapholitha*).

Glycyphagus cadaverum, in seeds of flax, etc., in Russian Union, 319.

Glycyphagus destructor (see *Lepidoglyphus*).

Glycyphagus domesticus, anatomy and development of, 456.

Glypta, parasite of Tortricids in Transcaucasia, 587.

Glypta haesitator, bionomics of, parasitising *Cydia nigricana* in Britain, 38.

Glypta rufiscutellaris (parasite of *Cydia molesta*), introduced into Australia, 544; in U.S.A., 377, 544.

Glyptomorpha nicevillei, parasite of *Scirpophaga* spp. in Mysore, 291.

Glyricidia, *Orthezia praelonga* on, in Trinidad, 25.

Gmelina arborea, pests of, in Burma, 692.

Gnathocerus, *Corynetes coeruleus* probably predacious on, in flour, 584.

- gnidiella*, *Cryptoblabes*.
Gnорimoschema, *Phthorimaea* (*q.v.*)
 not considered distinct from, **289**.
Gobaishia japonica, susceptibility
 of varieties of *Ulmus propinqua*
 to, in Japan, **443**.
 Gold Coast, summary of plant
 quarantines in, **592**.
 Gold Mines, *Micromalthus debilis* in
 timber in, in S. Africa, **60**.
 Golf Greens (see Turf).
Gomphocerus sibiricus (see *Aeropus*).
gonatias, *Linoclostis*.
Gonatopus, parasite of *Saccharo-*
sydne saccharivora in Florida, **657**.
Gonia cinerascens (see *Cnephalia*).
goniaeformis, *Tritaxys* (*Anamastax*,
Blepharipeza).
Gonipterus scutellatus, on *Eucalyptus*
 in Nyasaland, **126**.
Gonocephalum (see *Dasus*).
 Gooseberry, Aphids on, in Britain,
333, **596**; *Aspidiotus ostreae-*
formis on, in Czechoslovakia, **468**;
Nematus ribesii on, in Germany,
114; pests of, in U.S.A., **178**,
179, **596**, **597**; *Dasyneura ribi-*
cola confined to, **673**.
gorhami, *Epicauta*.
Gortyna immanis (see *Hydroecia*).
Goryphus javanicus, parasite of
Setora nitens in Java, **347**.
Gossyparia spuria, measures against,
 on elm in California, **649**.
gossypiella, *Platyedra* (*Pectinophora*).
gossypii, *Aphis*; *Bucculatrix*; *Cory-*
thuca; *Gasterocercodes*; *Macro-*
siphum (*Acyrtosiphon*); *Phena-*
coccus.
gossypiperda, *Bemisia*.
Gossypium (see Cotton).
gracilicorne, *Megymenum*.
gracilis, *Orthomorpha*; *Polygraphus*.
gradarius, *Ichneumon*.
 Grain Noctuid (see *Trachea basi-*
linea).
 Grain Weevil (see *Calandra gran-*
aria).
 Grain Wireworm, Northern (see
Corymbites aeripennis destructor).
 Gram (see *Cicer arietinum*).
graminis, *Chara*; *Dasyneura*.
graminum, *Pediculopsis*; *Steno-*
thrips; *Toxoptera* (*Rhopalo-*
siphum).
 Granadilla, *Dacus xanthodes* on, in
 Fiji, **212**.
granaria, *Calandra* (*Sitophilus*).
granarium, *Macrosiphum* (see *M.*
avenae); *Trogoderma*.
grandis, *Anthonomus*; *Harmolita*.
granella, *Tinea*.
 Grape Berry Moths (see *Polychrosis*
botrana and *P. viteana*).
 Grapefruit, *Orthezia praelonga* on,
 in Grenada, **25**; pests of, in
 U.S.A., **55**, **256**.
 Grapes, problem of arsenical resi-
 dues on, **191**, **495**; juice of,
 in baits for Trypetids, **270**.
Graphium ulmi (see *Ophiostoma*).
Grapholitha (see *Cydia*).
Graptolitha antennata, measures
 against, on apple in Quebec, **664**.
 Grass, Bent (see *Agrostis*).
 Grass, Couch (see *Agropyrum*
repens).
 Grass, Red-top (see *Agrostis vul-*
garis).
 Grass, Rye (see *Lolium*).
 Grass, Yellow Cat (see *Trisetum*
flavescens).
 Grasses, pests of, in Australia, **292**,
329, **389**, **603**; Cecidomyiids on,
 in Austria, **635**; pests of, in
 Britain, **122**, **635**; *Chirothrips*
hamatus on, in Finland, **160**;
 Cecidomyiids on, in France, **635**;
 pests of, in Germany, **63**, **519**;
Contarinia tritici on, in Italy, **3**;
Phytomyza nigra on, in Japan,
208; *Laphygma exempta* on, in
 Kenya, **666**; planted among
 clover against *Smynturus viridis*
 in New Zealand, **550**; pests of, in
 Russian Union, **151**, **312**, **319**,
680; Thysanoptera on, in
 Sweden, **121**; pests of, in U.S.A.,
248, **374**, **500**, **527**, **635**; causes
 of white ear in, **121**, **151**, **680**;
 cellular structure of, as a protec-
 tion against Thysanoptera, **121**;
 relations of locusts and grass-
 hoppers to, **12**, **178**, **214**, **321**,
387, **388**, **394**, **477**, **479**, **483**, **618**;
 cereal and sugar-cane pests on,
88, **122**, **208**, **268**, **363**, **364**, **537**,
547, **555**, **577**, **620**, **631**, **632**;
 sugar-cane mosaic in, **88**; mite
 in stored seeds of, **319**; as base
 for baits for locusts, **478**. (See
 Turf.)
 Grasshopper, Two-striped (see
Melanoplus bivittatus).
 Grasshoppers (see Locusts).
gravis, *Cryptorrhynchus* (*Sterno-*
chetus).
grayi, *Papilio scamander*.
 Greece, miscellaneous pests in, **452**,
453; locusts in, **478**; summary of
 plant quarantines in, **592**.
 Greenhouse Fumigation, **115**, **272**,
357, **526**.

Greenhouse Stone Cricket (see *Tachycines asynamorus*).
 Greenhouse Whitefly (see *Trialeurodes vaporariorum*).
greeni, *Microbracon*.
gregaria, *Schistocerca*.
Gregarina acridiorum, in *Schistocerca gregaria*, 486.
 Gregarines, in *Melolontha*, 496.
 Grenada, miscellaneous pests in, 25;
 termite in timber in, 56, 384;
Dasyscaphus parvipennis introduced into, against cacao thrips, 25.
grisella, *Achroia* (*Meliphora*).
griseola, *Leucopis*.
griseus, *Harpalus* (*Pseudophonus*); *Hyperodes*.
grossulariae, *Aphis*.
 Ground-nut Oil (see Oil, Ground-nut).
 Ground-nuts, *Aphis laburni* and rosette disease of, in Nyasaland, 126; *Dysdercus supersticiosus* on, in Sudan, 573.
 Ground-nuts (Stored), nutritive value of, for *Ephestia* and *Plodia*, 64, 173.
 Ground-nuts, Bambarra (see *Voandzeia subterranea*).
 Groundsel (see *Senecio vulgaris*).
Gryllica melzeri, sp. n., on *Coccoloba ilheense* in Brazil, 290.
Gryllotalpa, egg-chambers and oviposition of, 509.
Gryllotalpa africana, in Egypt, 509;
 on sugar-cane in Formosa, 363;
 on tobacco in Japan, 210; in Manchuria, 361; bionomics of, 363, 509.
Gryllotalpa formosana, on sugar-cane in Formosa, 206, 363;
 bionomics of, 206.
Gryllotalpa gryllotalpa (*vulgaris*), on barley in Czechoslovakia, 469;
 in Egypt, 509; on horse-radish in Germany, 110.
Gryllotalpa gryllotalpa f. *cophta*, in Egypt, 509.
Gryllulus (*Gryllus*) *assimilis* var. *pennsylvanicus*, bionomics of, on cotton in Louisiana, 341.
 Guadeloupe, virus disease in banana in, 289; parasite of *Leucoptera coffeella* in, and its introduction into Porto Rico, 435.
Guaiacum, resistance of timber of, to termites, 465.
 Guava, Coccids on, in Egypt, 509;
Coccus viridis on, in Haiti, 84;
Dacus psidii on, in Pacific

Islands, 131, 294; *Helopeltis bergrothi* on, in Sudan, 574;
Euxesta stigmatias on, 328.
guddmannella, *Phthorimaea* (*Gnori-moschema*).
 Guiana, British, utilisation of *Metagonistylum minense* against *Diatraea* in, 505, 524; miscellaneous pests in, 524; *Larva americana* not found in, 85;
 beetles boring in rum puncheons exported from, 328, 524; *M. minense* introduced into St. Lucia from, 182.
 Guiana, Dutch, *Atta* spp. in, 567;
Larva americana in, 85.
guineense, *Tetramorium*.
gularis, *Aphomia* (*Paralispa*).
 Gulls, destroying *Melolontha* in Germany, 608.
guppyi, *Tomaspsis*.
gurneyi, *Coccophagus*.
guttulosa, *Austracris*.
gyllenhali, *Pissodes*.
Gymnoascus ruber, infesting *Cydia nigricana* in Britain, 39.
Gymnosoma rotundatum, parasite of Pentatomids in Germany, 64.
Gypsonoma minutana (see *Enarmonia*).
 Gypsum, as a carrier for dusts, 32, 463.
Gyranusa citrina, sp. n., parasite of Coccids in Kenya, 39.

H.

Habrobracon (see *Microbracon*).
Habrolepis dalmanni, utilisation of, against *Asterolecanium variosum* in Australia and New Zealand, 21, 546.
Hadrobregmus gibbicollis, in building timber and trees in U.S.A., 499.
haematodes, *Tibicen*.
haematopus, *Penthaleus* (see *P. major*).
 Haemoglobin, affecting oil deposits of sprays, 411.
haemorrhoidalis, *Athous* (see *A. obscurus*); *Heliothrips*; *Omocestus* (*Stenobothrus*).
haesitator, *Glypta*.
 Haiti, pests and diseases of banana in, 288, 289; miscellaneous pests in, 84, 85, 661; *Tiphia hispaniolae* in, 84; *Larva americana* apparently not occurring in, 85.
haitiensis, *Tetrastichus*.
hali, *Sturmia*.

- Halotydeus destructor*, bionomics and control of, in Australia, **131, 291, 545**.
- Haltichella*, parasite of *Gelechia cercerisella* in Kansas, **376**.
- Halticoptera*, parasite of *Euphranta* in Japan, **620**.
- Ham, *Necrobia rufipes* feeding on, **584**.
- hamatus*, *Chirothrips*.
- Hambletonia pseudococcina*, introduced into Porto Rico against *Pseudococcus brevipes*, **502**.
- Hamelia patens*, *Monalonia bahiense* on, in Brazil, **566**.
- Hamitermes* (see *Amitermes*).
- hampei*, *Stephanoderes*.
- Halpalia machaeralis*, parasites and biological control of, on teak in India and Burma, **263, 612, 693**.
- Haplodiplosis equestris*, on barley in Czechoslovakia, **468**.
- Haplothrips aculeatus*, in Holland, **269**; in Italy, **472**; bionomics of, in Sweden, **121**; on wheat, **121, 269**; doubtful vector of virus disease of sugar sorghum, **472**.
- Haplothrips distinguendus*, bionomics of, on wheat in Sweden, **121**.
- Haplothrips froggatti*, on vines in Queensland, **365, 603**; measures against, **365**.
- Haplothrips tritici*, on wheat in Russian Union, **453, 554**; analysis of injury by, **554**.
- harcyniae*, *Pissodes*.
- Harlequin Cabbage Bug (see *Murgantia histrionica*).
- Harmolita grandis*, on wheat in U.S.A., **280, 375**; measures against, **280**.
- Harmologa fumiferana* (Spruce Budworm), strain of, on *Pinus ponderosa* in Colorado, **377**.
- Harpalus griseus*, measures against, on strawberry in Germany, **457**.
- Harpalus rufipes* (*ruficornis*) (on strawberry), in Denmark, **117**; measures against, in Germany, **457, 466**.
- Harpobittacus australis*, preventing establishment of *Tyria jacobaeae* in Australia, **282**.
- Harvesting Machines, destruction of insects in, **315**.
- hattorii*, *Cinara*.
- Hawaii, miscellaneous pests in, **366, 367**; sugar-cane pests in, **90, 367, 368**; Tarsoneminae of, **224**; termites in, **180, 385**; biological control of noxious insects and plants in, **90, 366, 367, 368**; establishment of Agaonid pollinating *Ficus retusa* in, **367**; insects intercepted in aeroplanes in, **368**; introduction of beneficial insects into other countries from, **367, 382, 502, 546**; pests from, intercepted in U.S.A., **461**; legislation dealing with treatments of fruit, etc., for export to U.S.A. from, **344**.
- Hawthorn (see *Crataegus*).
- Hawthorn Stem Midge (see *Thomasiniana crataegi*).
- haywardi*, *Timocratica*.
- Hazel, pests of, in Greece, **452**; *Erranis* spp. on, in Poland, **438**; *Lachnosterna hirticula* on, in Wisconsin, **32**.
- Heat, treatment of lily bulbs with, against mites, **419, 617**; against pests of seeds and stored products, **102, 120, 137, 220, 225, 230, 235, 319, 513, 521, 573, 576, 638, 648, 667**; oven for treating dates with, against pests, **507**; treatment of fruit, etc., with, against Trypetids, **344**; treatment of timber and furniture with, against Coleoptera, **110, 181, 203**. (See Solar Heat, Steam and Water, Hot.)
- Heather, Lepidoptera on, in Scotland, **122**.
- hebetor*, *Microbracon*.
- hederae*, *Aspidiotus*.
- Heinsia pulchella*, destruction of, against *Virachola bimaculata* in Sierra Leone, **271**.
- helichrysi*, *Anuraphis* (see *A. padi*).
- Helicobia australis*, bionomics and taxonomy of, in Australia, **57**.
- heliopa*, *Phthorimaea*.
- Heliothis armigera*, in S. Africa, **223, 323, 330, 487, 488, 489**; in Australia, **57, 281, 389**; in Fiji, **641**; in Peru, **385**; in Philippines, **452**; in Porto Rico, **328**; in N. Rhodesia, **492**; in S. Rhodesia, **15, 16, 488, 491, 567**; in Russian Union, **146, 147, 304, 587, 589, 609**; in Sudan, **488, 573**; in U.S.A., **133, 179, 244, 245, 250, 370, 379, 392, 417, 423, 430, 431, 432, 525, 595**; on cabbage, **250, 370, 379, 641**; on *Citrus*, **15, 16, 330**; on cotton, **147, 221, 222, 223, 244, 245, 281, 304, 385, 417, 488, 491, 492, 573, 609**; susceptibility of varieties of cotton to, **221**; on flax and

- ramie, 180, 587; on leguminous plants, 179, 223, 431, 488, 489, 491, 492, 595; comparative attraction of strains of *Dolichos lablab* for, 488, 491, 492; on maize, 133, 179, 323, 328, 389, 392, 430, 431, 452, 488, 491, 492, 595; on solanaceous plants, 379, 389, 431, 432, 525, 589, 609, 641; concentrations of, on plants in flower, 179, 488, 491; bionomics of, 15, 147, 179, 430, 487, 488, 491, 492, 609; effects of temperature and humidity on, 15, 40, 146, 147; metabolism of, 336; food for adults of, in rearing experiments, 427; new fungus infesting, 392; disease in larvae of, 423; parasites of, 16, 57, 431, 567, 589, 609; ants hindering biological control of, by *Microbracon brevicornis*, 323; experiments in utilising *Trichogramma evanescens* against, 304; measures against, 15, 133, 244, 245, 328, 330, 370, 379, 380, 390, 417, 431, 432, 525, 595, 609; other Noctuids confused with, 431.
- Heliothis assulta* (on tobacco), in Japan, 444; in Sumatra, 17; transmitting virus disease in solanaceous plants, 444; tests of insecticides on, 17.
- Heliothis dipsacea*, on *Taraxacum kok-saghyz* in Kazakstan, 45.
- Heliothis obsoleta* (see *H. armigera*).
- Heliothis phloxiphaga*, on tomato in California, 431.
- Heliothis virescens*, on cotton in Peru, 385; on tobacco in Philip-pines, 451.
- Heliothrips fasciatus* (see *Hercothrips*).
- Heliothrips haemorrhoidalis*, in California, 649; measures against, on *Citrus* in New Zealand, 56; toxicity of dinitro-o-cyclohexyl-phenol to, 649.
- Helix aspersa*, failure to establish *Lampyrus noctiluca* against, in Australia, 546.
- Hellebore, tests of, against *Sciara* on mushrooms, 380.
- Hellula undalis*, measures against, on vegetables in China, 450; on cabbage in Louisiana and Fiji, 250, 641.
- Helopeltis antonii*, measures against, on cacao in Java, 523.
- Helopeltis bergrothi*, forms of, on *Eucalyptus* in Nyasaland, 126; factors affecting infestation of cotton by, in Sudan, 574; other food-plants of, 574.
- Helophorus*, on wheat in Denmark, 117.
- Helophorus nubilus*, 117.
- hemerobiella*, *Coleophora*.
- Hemerobius stigma*, predacious on *Chermes* spp. in Britain, 262, 263; proposed introduction of, into Australia, 263.
- Hemerocampa leucostigma*, in forests in Quebec, 464.
- hemerocampae*, *Tritneptis*.
- Hemiberlesea* (see *Aspidiotus*).
- hemipterus*, *Carpophilus*.
- Hemiteles carpocapsae*, parasite of *Cydia pomonella* in Central Asia, 588.
- Hemiteles chosensis*, parasite of *Apanteles liparidis* in Japan, 211.
- Hemiteles kumamotoensis*, parasite of *Apanteles liparidis* in Japan, 211.
- Hemlock (see *Tsuga*).
- Hemlock, Poison (see *Conium maculatum*).
- Hemlock Borer (see *Melanophila fulvoguttata*).
- Hemp, *Tetranychus telarius* on, in India, 127; insect fauna of, in Italy, 173; pests of, in Ukraine, 229, 322; (for smoking), sulphur unsuitable for use on, 127.
- Hemp Flea-beetle (see *Psylliodes attenuata*).
- heparana*, *Tortrix* (*Pandemis*).
- heraclella*, *Aphis*.
- herbarium*, *Catorama*.
- Hercothrips fasciatus* (Bean Thrips), destruction of wild food-plants of, in California, 240; imported into Japan on oranges from Canada and U.S.A., 616.
- herculeanus*, *Camponotus*.
- heros*, *Rhynchites*.
- Herring Oil, 525. (See Fish Oil.)
- Herse cingulata*, measures against, on sweet potato in Jamaica, 239.
- hesperidum*, *Coccus* (*Lecanium*).
- hesperum*, *Callidium antennatum*.
- hesperus*, *Lygus*; *Reticulitermes*.
- Hessian Fly (see *Mayetiola destructor*).
- Heterobostrychus aequalis*, in timber in Burma, 693.
- Heterobostrychus brunneus*, in timber in S. Africa, 60.
- Heteroderes laurenti*, in sugar-cane fields in Florida, 656.
- heterogramma*, *Decadarchis*.

- Heteroschema rugosopunctata* (prima), synonymy of, 434.
- Heterospilus anobiidivorus*, sp. n., parasite of *Neogastrallus librino-cens* in Florida, 461.
- Heterospilus prosopidis* (parasite of *Bruchus chinensis*), bionomics and utilisation of, in Japan, 616.
- Heterotermes*, in Australia, 545.
- Heterotermes tenuis*, in W. Indies, 55, 56, 239, 464; attacking trees, 464; damaging furniture and timber, 55, 56, 465; characters of, 55; measures against, 55, 465.
- Hexachlorethane, tests with, against clothes moths, 635, 636.
- Hexamera, attempted establishment of, against *Oncopera* in Australia, 545.
- Hexameris, in *Trigonophymus arrogans* in Argentina, 214; in *Leptinotarsa decemlineata* in Germany, 100; in grasshoppers in U.S.A., 76.
- Hexameris acridiorum, 214.
- Hexamitodera semivelutina, on clove trees in Netherlands Indies, 227.
- hibisci, Eriophyes.
- Hibiscus* spp., relation of *Dysdercus* spp. to, in Africa, 222, 489, 490, 492, 573; alternative food-plants of other cotton pests, 136, 164, 184, 572, 573, 577, 661; pests of, in Fiji, 641; *Corythuca gossypii* on, in Jamaica, 239; Aleurodids on, in greenhouse in Virginia, 530.
- Hibiscus esculentus*, *Tetranychus* on, in India, 128; *Sylepta derogata* on, in Seychelles, 335.
- Hibiscus rosa-sinensis*, *Saissetia nigra* on, in Japan, 445.
- hickeliana, Chaetophorus.
- Hickory, pests of, in U.S.A., 32, 377.
- Hickory Shuckworm (see *Enarmonia caryana*).
- hieracii, Myzus.
- Hieracium pilosella*, Pentatomids on, in Germany, 632.
- hieroglyphica, *Saperda scalaris*.
- hilaris, *Bagrada*.
- hindustanicus, *Schizotetranychus* (*Tetranychus*).
- hippocastani, *Melolontha*.
- Hippodamia convergens*, attempted utilisation of, against Aphids in U.S.A., 30, 428; artificial maintenance of egg-production by, 81; HCN not producing protective stupefaction in, 344.
- Hippodamia quinquesignata*, on mountains in Utah, 30.
- Hippotion celerio*, on grape-vines in Queensland, 365.
- hirsutus, *Phenacoccus*.
- hirta, *Epicometis*; *Epimadiza*; *Oemona*.
- hirtella, *Epicometis* (see *E. hirta*).
- hirticula, *Lachnosterna* (*Phyllophaga*).
- hirtus, *Blissus*.
- Hispa gestroi*, bionomics and control of, on rice in Madagascar, 664.
- hispaniolae, *Tiphia*.
- histrionica, *Murgantia*.
- hoefti, *Colaphellus*.
- Holcocera pulvere*a, predacious on *Laccifer lacca* in India, 128, 575; longevity of, 128; parasites and biological control of, 129, 575.
- Holland, *Cydia pomonella* on apple in, 578; *Contarinia nasturtii* on cabbage in, 514; pests and diseases of elm and willow in, 205, 269, 396, 563; *Thrips* spp. on flax and peas in, 233, 234, 465; *Leptinotarsa decemlineata* in, 62, 106, 269, 583; miscellaneous pests in, 269; *Mero-don equestris* on narcissus in, 494; Aphids and virus diseases of potato in, 157, 563, 578; Tetranychid mites of, 301; pests of wheat in, 268; beneficial insects in, 205, 268, 269, 397, 579; legislation against introduction of *L. decemlineata* into Britain from, 356.
- Holly (see *Ilex* spp.).
- Hollyhock, *Tischeria omissa* on, in California, 569.
- Hollyhock Leaf-miner (see *Tischeria omissa*).
- Holotrichia (see *Lachnosterna*).
- Homalotylus*, new parasites of, in S. Africa, 40.
- Homona coffearia* (on tea), new parasite of, introduced into Ceylon from Java, 19.
- homonae, *Macrocentrus*.
- Homorocoryphus vicinus*, in Belgian Congo, 476.
- honestus, *Dysdercus*.
- Honey, in baits for ants, 44.
- Honey Fungus (see *Armillaria mellea*).
- Hoop Pine (see *Araucaria cunninghami*).
- Hoplia philanthus*, damaging lawns, etc., in Holland, 269.

- Hoplocampa*, on plum in Czechoslovakia, 468.
- Hoplocampa brevis*, measures against, on pear and apple in Italy, 197.
- Hoplocampa flava* (Plum Sawfly), measures against, in Germany and Italy, 46, 97, 297.
- Hoplocampa minuta* (*fulvicornis*) (Plum Sawfly), in Denmark, 117; in Germany, 46, 297; in Italy, 97; measures against, 46, 97, 117, 297.
- Hoplocampa testudinea* (on apple), in Britain, 676; in Denmark, 117; in Poland, 675; bionomics of, 676.
- Hoplocerambyx spinicornis*, adult longevity of, 613.
- Hoplothrips liliorum*, sp. n., on lily bulbs in Japan and Korea, 50.
- Hops, pests of, in Britain, 1, 333;
- Hydroecia immanis* on, in New York, 593.
- Hop-vine Borer (see *Hydroecia immanis*).
- horishana*, *Lachnosterna* (*Holotrichia*).
- Horismenus floridanus*, parasite of *Apanteles congregatus* in Tennessee, 254.
- Horistonotus uhleri*, bionomics and control of, in S. Carolina, 500.
- Hormius*, parasite of Pyralid in Morocco, 193; parasite of *Leucoptera* resembling, in Tanganyika, 127; parasite of, 193.
- Horns, damaged by *Tinea vastella* in Belgian Congo, 294.
- Horse Beans (see Beans).
- Horse-radish, pests of, in Germany, 110.
- horticola*, *Anomala* (*Phyllopertha*).
- hortulanus*, *Bibio*.
- Household Pests, books on, 237, 382; importance of Psocids as, 102, 648; infesting materials used for insulation, 640; birds' nests of little importance as source of, 101,
- House-fly (see *Musca domestica*).
- hova*, *Paratamiclea pallida*.
- howardi*, *Dysdercus*.
- hubbardi*, *Ataxia*.
- Hudsona anceps*, type of injury to wheat grains by, in New Zealand, 548.
- hudsonias*, *Systema*.
- huebneri*, *Papuana*.
- huegeli*, *Earias*.
- humeralis*, *Carpophilus*.
- Humidity, relations of mites to, 147, 151, 313, 314, 318, 319, 585, 625, 626; relations of locusts to, 11, 12, 92, 145, 146, 147, 214, 388, 479, 480, 483, 484, 487, 570, 603, 604; relations of other insects to, 15, 16, 17, 26, 27, 44, 47, 60, 61, 89, 102, 112, 119, 120, 130, 143, 145, 146, 147, 148, 167, 195, 196, 223, 224, 228, 229, 230, 234, 235, 239, 262, 265, 266, 316, 321, 323, 324, 399, 441, 442, 454, 455, 466, 488, 489, 491, 501, 519, 557, 564, 572, 588, 589, 590, 607, 613, 632, 647, 648, 666, 677, 679, 682, 692; formula for indicating local conditions of, 146; control of, in small cabinets, 568.
- humuli*, *Contarinia* (*Diplosis*); *Phorodon*.
- Hungary, orchard pests in, 458, 690.
- hyacinthi*, *Rhizoglyphus*.
- Hyadaphis sii* (*melliferum*, *xylostei*), transmitting virus disease of celery in California, 590; synonymy of, 590.
- hyalinata*, *Diaphania*.
- Hyalomyia brasiliensis*, sp. n., parasite of *Dysdercus* spp. in Brazil, 22.
- Hyalomyia dysderci*, sp. n., parasite of *Dysdercus* spp. in Brazil, 22.
- Hyalomyia mendesi*, sp. n., parasite of *Dysdercus mendesi* in Brazil, 22.
- Hyalomyodes brasiliensis* (see *Clistomorpha*).
- Hyalopteris arundinis*, measures against, on plum in Italy, 98.
- Hybernina bajaria* (see *Erannis*).
- Hyblaea puera*, on teak in India and Burma, 612, 693.
- Hydrangea hortensis*, *Tetranychus telarius* on, in Germany, 583.
- Hydriomena bilineata* (see *Cidaria*).
- Hydrocarbons, Chlorinated, effect of spraying with, against vine moth pupae, 103. (See *Xylamon Preparations*.)
- Hydrochloric Acid, for removing insecticide residues from fruit, 139, 189, 193, 273, 432, 642, 648, 649; effect of addition of other agents to, 189, 190, 648, 649; sodium silicate compared with, 190.
- Hydrocyanic Acid, as a greenhouse fumigant, 115, 356, 526; fumigation of mushroom houses with, 260; fumigation of nursery

- stock with, 466, 690 ; tent fumigation of *Citrus* with, 15, 55, 149, 292, 342, 343, 440, 508 ; against pests of stored products, 29, 188, 220, 378, 451 ; against *Pyrausta nubilalis* in broom corn, 416 ; against Lepidoptera in baled cotton and cottonseed, 53-55, 165, 174 ; against Coleoptera in wood, 181, 203 ; factors affecting resistance of Coccids to, 342, 343, 508 ; unsatisfactory against *Erythroneura pallidifrons*, 115 ; tests of toxicity of, to insects, 309, 605 ; protective stupefaction of insects by, 343, 344, 508 ; effect of temperature on toxicity of, 111 ; causing injury to plants, 15, 508, 526 ; vacuum fumigation with, 53, 54, 174, 181, 417 ; methods of applying, 15, 174, 260, 440, 508 ; general paper on uses of, 637. (See Calcium and Potassium Cyanides and Zyklon.)
- Hydroecia inmanis*, measures against, on hops in New York, 593.
- Hydroecia micacea*, bionomics of, on potato in Scotland, 122.
- Hydrogen Phosphide, danger of production of, in poisoned baits, 102.
- Hydrogen-ion Concentration, affecting deposits and toxicity of sprays, 411, 412, 649.
- Hygrophila*, relation of *Nomadacris septemfasciata* to, in Portuguese E. Africa, 62.
- hylaesus*, Dolba.
- hylas*, *Platytelenomus*.
- Hylastes ater*, *Sirex* possibly favoured by, on pines in New Zealand, 504.
- Hylastes palliatus*, bionomics of, in Sweden, 123.
- Hylastes rufipes*, on elm in U.S.A., 68, 190, 378, 418 ; bionomics of, 68, 418 ; associated with *Ophiostoma ulmi*, 68, 378 ; factors affecting infestation of traplogs by, 69, 190.
- Hylecoetus* (*Hylecerus*) *flabellicornis*, on *Picea jezoensis* in Sakhalin, 19.
- Hylecoetus matsushitai*, sp. n., on conifers in Japan and Sakhalin, 19.
- Hylemyia*, scope and synonymy of, 113, 114.
- Hylemyia antiqua* (Onion Fly), measures against, on onions and leeks in Britain, 674, 675.
- Hylemyia brassicae* (on crucifers), in Britain, 116 ; in Germany, 110 ; new parasite of, in Morocco, 605 ; bionomics and ecology of, in Russia, 316 ; measures against, 116, 317.
- Hylemyia cilicrura*, on sweet lupin in Russia, 150.
- Hylemyia floralis*, on horse-radish in Germany, 110 ; on cabbage in Russia, 316.
- Hylemyia genitalis*, *H. tritici* recorded as, in Russian Union, 311.
- Hylemyia radicum*, new parasite of, on crucifers in Morocco, 605.
- Hylemyia seneciella*, introduced into New Zealand against *Senecio jacobaea*, 449.
- Hylemyia sepia*, bionomics of, on wheat in Morocco, 124.
- Hylemyia trichodactyla*, on sweet lupin in Russia, 150.
- Hylemyia tritici*, sp. n., bionomics of, on cereals in Russian Union, 311 ; measures against, 312.
- Hylesinus vestitus*, on pistachio in Greece, 452.
- Hyloicus kalmiae* (see *Sphinx*).
- Hylotrupes bajulus*, in timber in Czechoslovakia, 469 ; in building timbers in Germany, 6, 110, 202, 203, 204, 268, 335, 520 ; age of timber affecting infestation by, 520 ; ecology and nutrition of larvae of, 204, 335, 564 ; measures against, 6, 110, 203 ; technique for testing wood preservatives against, 202, 203, 204 ; criticism of tests of Xylamon against, 520 ; statistical data on prevalence of, 6, 203, 204, 268.
- Hylurgopinus* (see *Hylastes*).
- Hylurgops* (see *Hylastes*).
- Hymenia recurvalis* (*fascialis*), measures against, in China, 451 ; on beet and *Amarantus* in Fiji, 641 ; on spinach in Japan, 441.
- hyoscyami*, *Therapha* (*Corizus*).
- Hyparrhenia*, relation of *Nomadacris septemfasciata* to, in Tanganyika, 387, 388.
- Hypera abyssinialis* (*ignotalis*), parasites and disease of, on *Lantana* in India, 612.
- Hypera transsylvanica*, bionomics and control of, on lucerne in Russia, 108.

- Hypera variabilis*, tests of insecticides on, in Uzbekistan, 627.
- Hyperaspis senegalensis*, parasitism affecting value of, against *Pseudococcus kenyae* in Kenya, 665.
- hyperici*, *Agrilus*; *Chrysomela* (*Chrysolina*).
- Hypericum perforatum*, *Aphis chloris* on, in Britain, 59; attempted establishment of insects against, in Australia, 282, 546.
- Hyperodes griseus*, bionomics of, in New Zealand, 547, 548.
- Hyphantria cunea*, in U.S.A., 421, 528; parasites of, 528; basic copper arsenate against, 421.
- Hypnoidus riparius*, in Britain, 96.
- hypochlora*, *Colaspis*.
- hypogaea*, *Diarthronomyia*.
- Hypolixus* (see *Lixus*).
- Hyponomeuta padellus*, measures against, on plum in Italy, 98.
- Hyponomeuta padellus malinellus* (on apple), in Manchuria, 340; utilisation of bacteria against, in Russia, 455.
- Hypopholis sommeri*, parasite of, in S. Africa, 611.
- Hypopteromalus tabacum*, parasite of *Apanteles congregatus* in Florida, 254.
- Hyposoter exiguae*, parasite of *Heliothis armigera* in California, 431.
- Hypsantyx impressus*, parasite of *Diprion similis* in Poland, 671.
- Hypsipyla robusta*, natural enemies and biological control of, on *Cedrela toona* and mahogany in India, 612.
- Hyptis atrorubens*, *Larra americana* feeding on nectar of, in Brazil, 85.
- Hyssopus thymus*, parasite of *Rhyacionia buoliana* in Connecticut, 73, 176; bionomics of, 73.
- Hysterononeura setariae* (see *Carolinaia*).
- I.
- Ibalia leucospoides*, bionomics of, in Britain, 504.
- िकास*, *Ecpantheria*.
- Icerya aegyptiaca*, measures against, on *Citrus* and guava in Egypt, 509.
- Icerya purchasi*, in Argentina, 23; in Cyprus, 270; in Egypt, 509; occurrence of males of, in Italy and Sicily, 5; in Japan, 445; life-cycle of, in Morocco, 691; in Porto Rico, 434; in Russian Union, 589; on *Citrus*, 23, 270, 509; on other plants, 5, 434, 691; utilisation of *Rodolia cardinalis* against, 23, 434, 445, 589; oil sprays against, 509.
- Icerya seychellarum*, on avocado in Fiji, 641; *Rodolia cardinalis* introduced into Mauritius against, 611.
- Ichneumon disparis*, parasite of *Lymantria monacha* in Germany, 581.
- Ichneumon fabricator*, parasite of *Erannis defoliaria* in Poland, 438.
- Ichneumon gradarius*, parasite of *Charaas graminis* in Scotland, 122.
- Ichneumon pisorius*, parasite of *Sphinx pinastri* in Poland, 677; parasitised by *Theronia atalantae*, 677.
- Ichneutes* spp., parasitic on *Pikoneuma alaskensis* in Maine, 540.
- Ichneutes fulvipes*, 540.
- Idaho, ecology and relation to curly-top of *Eutettix tenellus* in, 286, 412; miscellaneous pests in, 31, 379, 456, 596; larch sawflies in, 599; beneficial insects and biological control in, 30, 31, 379.
- Idatiella albisignata*, bionomics of, in Australia and New Zealand, 159.
- Ideththis gelechia*, parasite of *Gelechia cercerisella* in Kansas, 376.
- Idgia melanura*, predacious on *Hypsipyla robusta* in India, 612.
- Idiococcus bambusae*, gen. et sp. n., on bamboo in Japan, 624.
- idiota*, *Pentodon*; *Pyrosis* (*Bhima*).
- igniventris*, *Chrysobothris*.
- ignotalis*, *Hypena* (see *H. abyssinialis*).
- Ilex aquifolium*, *Phytomyza* spp. on, in Britain and N. America, 669.
- Ilex opaca*, *Phytomyza ilicicola* on, in N. America, 669.
- ilicicola*, *Phytomyza*.
- ilicis*, *Opisus*; *Phytomyza* (*Chromatomyza*).
- illepida*, *Argyroploce* (*Cryptophlebia*).
- Illiberis pruni* (on fruit trees), bionomics and control of, in China, 450, 668; in Manchuria, 340.
- Illinoia* (see *Macrosiphum*).

- Illinois, *Blissus leucopterus* on cereals in, 284; miscellaneous pests in, 67, 79, 597; orchard pests in, 70, 255, 526, 527; grasshoppers and their natural enemies in, 67, 75; Syrphids of, 82.
- immaculata*, *Cyclocephala* (*Ochrosidia*); *Scutigerella*.
- immanis*, *Hydroecia* (*Gortyna*).
- impexus*, *Otiorrhynchus*.
- impictiventris*, *Euschistus*.
- implicita*, *Lachnosterna* (*Phyllophaga*).
- importata*, *Chopardina* (see *Dolichopoda bormansi*).
- impressicollis*, *Spheganolestes*.
- impressus*, *Hyphantix*.
- inaequalis*, *Coelophora*.
- Inareolata* (see *Angitia*).
- incertellus*, *Schoenobius* (see *S. bipunctifer*).
- incisi*, *Opius*.
- incompleta*, *Carpomyia*.
- inconsequens*, *Taeniothrips*.
- inconspicua*, *Sturmia*.
- inconspicuoides*, *Sturmia*.
- inconstans*, *Parastasiä*.
- India, cotton pests in, 127, 128, 228, 575, 576; forest pests in, 224, 612; fruit pests in, 128, 385, 392, 503, 577; insects attacking *Lantana* in, 612; miscellaneous pests in, 494, 577, 584; sugar-cane pests in, 128, 395, 558, 575, 576; pests of timber in, 337, 465, 612; cultivation and pests of lac and its host-trees in, 128, 575; locusts in, 291, 484, 485, 559, 560, 577, 624; mites attacking crops in, 127; *Rhizopertha* damaging pith helmets in, 612; beneficial insects and biological control in, 128, 129, 228, 263, 385, 505, 506, 575, 577, 612; development and importance of economic entomology in, 391, 448; natural enemies of *Pseudococcus* introduced into Kenya from, 665. (See also under the various Provinces.)
- Indiana, *Cydia pomonella* on apple in, 272, 273, 643, 652; cereal pests in, 378, 414; natural enemies of grasshoppers in, 75; *Scolytus multistriatus* in, 599.
- indica*, *Malacosoma* (*Clisiocampa*); *Margaronia*.
- indicum*, *Syntomosphyrum* (*Melittobia*).
- indicus*, *Paratetranychus*.
- Indo-China, *Xylotrechus quadripes* on coffee in, 49; locusts in, 486.
- induta*, *Aeolesthes*.
- inferens*, *Sesamia*.
- infuscata*, *Cytherea*.
- infuscatellus*, *Chilo*.
- infuscatus*, *Orthostethus*.
- Inglisia conchiformis*, new parasite of, in *Cajanus* in Uganda, 40.
- innotata*, *Scirpophaga*.
- Inocarpus*, pests of, in Fiji, 19, 366.
- Inocarpus edulis*, *Dacus psidii* on, in Society Is., 294.
- inopinata*, *Cydia* (*Grapholitha*).
- inopinatus*, *Prothiotermes*.
- inops*, *Sitona*.
- inornatus*, *Chilocorus renipustulatus*.
- Inostemma*, parasite of *Dasyneura triseti* in Austria, 635.
- inquisitor*, *Calosoma*.
- insectella*, auct., *Setomorpha* (see *S. rutella*).
- insectella*, F., *Tinea*.
- Insecticides, methods of testing, 143, 202, 203, 204, 236, 241, 243, 419, 422, 524, 528, 695; tests of penetration of, through membranes and tracheae of insects, 263, 579, 580; determination of particle-size distribution of, 541; plant derivatives and synthetic organic compounds as potential, 104, 134, 285, 331, 392, 419, 593; patents relating to, 224, 392, 694; certification of, in France, 675; general papers on, 100, 102, 456.
- Insects, review of injuries to plants caused by toxins of, 624; lists of popular names of, 437; preparation of specimens of, 440; Coleoptera attacking specimens of, 47, 196.
- insequalis*, *Pyrausta*.
- insidiosus*, *Orius*.
- insignis*, *Apanteles*.
- instabilis*, *Macrocentrus*.
- instigator*, *Pimpla*.
- insulana*, *Earias*.
- insularis*, *Frankliniella*; *Scepticus*.
- integer*, *Dendrosoter*.
- integriceps*, *Eurygaster*.
- intermedius*, *Dysdercus*.
- interpunctella*, *Plodia*.
- interruptor*, *Cremastus*.
- interruptus*, *Euacanthus*.
- interstitialis*, *Baris*.
- intonsa*, *Frankliniella*.
- intricata*, *Oxya*.
- intricatoria*, *Echthromorpha*.
- Invermay Bug (see *Nysius turneri*).
- inversa*, *Lachnosterna* (*Phyllophaga*).
- io*, *Vanessa*.

- Iowa, *Alabama argillacea* in, 260 ; grasshoppers in, 134, 138, 537.
- Ipobracon*, in sugar-cane fields in Florida, 659.
- Ipobracon rimac* (parasite of *Diatraea saccharalis*), introduced into Florida from Peru, 658 ; introduced into Porto Rico, 502.
- Ipocoelius* (see *Tomicobia*).
- Ipomoea* spp., destruction of, against *Cylas formicarius* in U.S.A., 379 ; susceptibility of, to *Anophia leucomelas*, 444. (See Sweet Potato.)
- Ips*, new parasite of, in U.S.A., 324.
- Ips japonicus*, on *Picea jezoensis* in Japan and Sakhalin, 615 ; possibly a race of *I. typographus*, 615.
- Ips sexdentatus*, parasite of, in Turkey, 522.
- Ips typographus*, bionomics and control of, on spruce in Sweden, 122, 123 ; *I. japonicus* possibly a race of, 615.
- Iran (see Persia).
- iridescens*, *Levuana*.
- iridipennis*, *Xylocopa*.
- Iris, Aphid transmitting virus disease of, in Germany, 686 ; *Aristotelia* on, in Japan, 441 ; mite on, in New York, 79.
- Iron Sulphate (see Ferrous Sulphate).
- irrorata*, *Leucopholis*.
- isabella*, *Diacrisia* (*Isia*).
- Isaria*, infesting *Sphinx pinastri* in Poland, 677 ; infesting *Petrusina marginata* in Porto Rico, 501.
- Isaria farinosa*, infesting *Cydia nigricana* in Britain, 39.
- Ischnaspis longirostris*, establishment of Coccinellids against, on coconut in Seychelles, 335.
- ishiharai*, *Chermes* (*Adelges*).
- Isia isabella* (see *Diacrisia*).
- isocrates*, *Virachola*.
- Isoneurothrips parvispinus*, measures against, on tobacco in Netherlands Indies, 493.
- Isostasius punctiger*, parasite of wheat gall-midges in Holland, 268.
- Italian Millet (see *Setaria italica*).
- Italian Pear Scale (see *Epidiaspis leperii*).
- italicus*, *Calliptamus* (*Caloptenus*).
- Italy, cereal pests in, 3, 174, 197, 198, 199, 295, 472 ; virus disease of sugar sorghum in, 472 ; pests of chestnuts in, 358 ; insect fauna of hemp in, 173 ; *Bruchus cisti* on lupins in, 201, 495 ; miscellaneous pests in, 5, 471, 473 ; olive pests in, 98, 473, 568 ; orchard pests in, 4, 5, 97, 98, 104, 115, 197, 199, 235, 296, 297, 515, 516, 629 ; pests of stored products in, 172, 198, 199, 234 ; *Dermestes lardarius* damaging silkworm cocoons in, 198 ; Aphids of, 224, 512 ; Coccids of, 48, 511 ; *Galerucella nymphaeae* in, 3 ; *Thaumetopoea* spp. in, 516 ; beneficial insects in, 3, 4, 5, 174, 199, 296, 297, 471, 472, 629, 630 ; importance of economic entomology in, 474 ; summaries of plant quarantines in, 274, 592 ; danger of spread of *Leptinotarsa decemlineata* into, 583 ; *Encarsia* spp. probably imported into Britain from, 265 ; pests imported into other countries from, 160, 218, 265, 623.
- itaiyensis*, *Ceroplastes*.
- Ivory Nut Palm (see *Metroxylon*).

J.

- Jack Pine (see *Pinus banksiana*).
- jacobaeae*, *Tyria*.
- jacobsoni*, *Parahydrotaea*.
- Jamaica, termites in, 181, 239, 384, 693 ; miscellaneous pests in, 181, 238 ; beneficial insects and biological control in, 212, 238, 239, 253 ; summary of plant quarantines in, 592.
- jamaicensis*, *Lachnosterna*.
- janata*, *Achaea*.
- Japan, cotton pests in, 225, 555, 557 ; pests of crucifers in, 207, 443, 444, 624 ; forest pests in, 19, 91, 209, 211, 235, 338, 339, 441, 443, 615 ; pests of fruit trees in, 207, 209, 211, 225, 338, 361, 440, 441, 556, 557, 616, 617, 620, 668 ; *Chrysomphalus ficus* on *Elaeagnus pungens* in, 91 ; pests of greenhouse and ornamental plants in, 50, 210, 212, 419, 445, 616, 617 ; pests of leguminous crops in, 19, 103, 208, 210, 338, 361, 362, 556, 616, 617, 624 ; pests of mulberry in, 103, 555 ; rice pests in, 207, 209, 225, 338, 362, 440, 441, 442, 555, 556, 619, 620 ; pests of other cereals and grasses in, 208, 556 ; pests of solanaceous plants in, 210, 225, 362, 441, 444, 446, 555 ;

- pests of stored products in, **210, 339, 360, 440, 445**; pests of sweet potato in, **444, 445, 446, 620**; locust outbreak in, **618**; miscellaneous pests in, **17, 210, 440, 441**; insects and virus diseases in, **362, 444, 555**; illustrations of insects in, **446**; new Aphids in, **104, 224, 338**; new Coccids in, **103, 624**; parasite and hyperparasite of *Bombyx mori* in, **442, 443**; beneficial insects in, **91, 207, 209, 210, 211, 212, 327, 338, 339, 441, 442, 556, 557, 615, 616, 617, 619, 620, 624**; biological control in, **445, 619**; pests intercepted in, or liable to be introduced into, **50, 208, 568, 615, 616**; beneficial insects introduced into U.S.A. from, **144, 377, 615**.
- Japanese Beetle (see *Popillia japonica*).
- Japanese Empire, distribution and food-plants of *Saissetia nigra* in, **445**.
- Japanese Mandated Islands, Thysanoptera intercepted in Japan from, **50, 616**.
- Japanese Red Pine (see *Pinus densiflora*).
- Japanese Weevil (see *Calomycterus setarius*).
- japonica*, *Aserica* (*Autoserica*); *Gobaishia*; *Popillia*.
- japonicum*, *Eriosoma ulmi*; *Trichogramma*.
- japonicus*, *Attagenus*; *Chermes* (*Adelges*); *Coelonotus* (*Aphidius*); *Ips*; *Meteorus*; *Ptinus*; *Rhizophagus*.
- Jarring, to dislodge pests from trees, **10, 156, 196, 300, 544**.
- Jasminum pubescens*, *Petrusina marginata* on, in Porto Rico, **501**.
- javana*, *Chaetexorista*; *Pheidole*.
- javanica*, *Tessaratomya*.
- javanicus*, *Coptotermes*; *Goryphus*.
- javanus*, *Chrysocoris*; *Plaesus*.
- Jimson Weed (see *Datura stramonium*).
- jourdani*, *Aspidiotus* (*Hemiberlesea*).
- Juglans cinerea*, *Alsophila pometaria* on, in Canada, **663**.
- Juglans nigra*, experiments against *Chrysobothris femorata* on, in Oklahoma, **420**.
- Juglans regia* (see Walnut).
- juglansiaria*, *Zamacra*.
- juglans-regiae*, *Aspidiotus*.
- Jugoslavia, *Aphelinus mali* in, **10**; *Ceresa bubalus* in, **474**; locusts in, **479**; orchard pests in, **10, 690**; *Polychrosis botrana* in, **494**; summary of plant quarantines, in, **592**.
- junceus*, *Tychius*.
- junci*, *Lixus*.
- jungi*, *Austroicetes* (see *A. cruciata*).
- Juniper (*Juniperus*), *Phloeosinus* spp. on, in Central Asia, France and Algeria, **153, 225, 226**; *Diaspis visci* on, in Czechoslovakia and New York, **469, 529**.
- Juniper Scale (see *Diaspis visci*).
- juvencus*, *Sirex* (*Paururus*).

K.

- Kainit, unsatisfactory against wireworms on sugar-cane, **656**.
- Kakothrips pisivorus* (*robustus*), on leguminous crops in Britain, **332**; carried by aerial currents, **167**.
- Kale, *Meligethes aeneus* on, in Britain, **333**.
- kalmiae*, *Sphinx* (*Hyloicus*).
- kalmii*, *Lygaeus*.
- kamerunicus*, *Prosoestus* (*Derelomus*).
- kamiyae*, *Calliceras*.
- Kansas, *Cydia pomonella* on apple in, **166**; *Eutettix tenellus* on beet in, **594**; insects attacking bindweed in, **375**; cereal pests in, **274, 341, 374, 375, 376, 542**; miscellaneous pests in, **165, 374, 376**; *Monotoma parallela* in stored cereals in, **600**; grasshoppers in, **341, 376**; annual insect population records in, **140, 141**; beneficial insects in, **374, 375, 376**; mite destroying grasshopper eggs in, **376**.
- Kaolin, as carrier for sulphur dust, **187**.
- Kapok, new Lamiid on, in Brazil, **290**; *Dysdercus supersticiosus* on, in Sudan, **573**.
- karafutonis*, *Chermes* (*Adelges*).
- Karaya Gum, uses of, in sprays, **177, 525, 645**.
- kazanksyi*, *Pseudococcus*.
- Kentucky, *Lachnosterna* spp. in, **592**; *Protoparce* spp. and their natural enemies in, **252, 253**; *Scolytus multistriatus* in, **599**.
- Kenya Colony, coffee pests in, **40, 503, 665, 666, 667**; miscellaneous pests in, **666, 667**;

beneficial insects and biological control in, 40, 503, 665, 666 ; plant pest legislation in, 274, 666.

kenyae, *Pseudococcus*.

Kerosene, spraying with, against *Leptocoris trivittatus*, 374 ; rice-fields treated with, against *Nymphula depunctalis*, 364 ; use of, against *Pentalonia nigronervosa*, 213 ; injected into horns against *Tinea vastella*, 295 ; in mixtures for treating timber against pests, 181, 337 ; as a solvent, 426, 450, 510, 544 ; atomised sprays of insecticides in, against *Eutettix tenellus*, 412 ; use of, in olive oil emulsions, 6.

Kerosene Emulsions (see Oil Emulsions).

khapra, *Trogoderma* (see *T. granarium*).

kiangsu, *Ceracris*.

kinugasai, *Phloeothrips*.

Kites, used in studying distribution of insects by wind, 167.

kivuensis, *Anagyrus*.

klugi, *Aelia* ; *Tritneptis* (*Pteromalus*).

knighti, *Monalonia*.

kockiana, *Carcelia*.

koebeli, *Tritneptis*.

kojima, *Eutelus*.

kondonis, *Rhizococcus*.

kono, *Prociophilus*.

Korea, miscellaneous pests in, 19, 50 ; *Diplosis mori* on mulberry in, 337 ; pests of pear in, 557, 668 ; rice pests in, 557, 618 ; *Galerucella distincta* on strawberry in, 619 ; *Plodia interpunctella* in stored products in, 225 ; summary of plant quarantines in, 592 ; beneficial insects in, 225, 338 ; utilisation of parasites from, against *Popillia* and *Platyedra* in U.S.A., 377, 381.

korschelti, *Capitophorus* (*Cryptomyzus*).

kuehniella, *Ephestia*.

kumamotoensis, *Hemiteles*.

kunoense, *Lecanium*.

Kutane, 431.

kuwana, *Oöencyrtus*.

Kuwanaspis arundinariae, sp. n., on *Arundinaria* in Formosa, 103.

Kuwanidia betulae, in Russia, 235 ; characters of, 235.

Kuwanidia quercus, in Japan, 235 ; characters of, 235.

Kuwanidia rubra, sp. n., bionomics of, on *Quercus ilex* in France and Corsica, 235.

L.

labdacus, *Spathius*.

labradus, *Zizera* (*Zizina*).

laburni, *Aphis* (*Doralis*).

Laccifer lacca (Lac), cultivation and natural enemies of, in India, 128, 129, 575 ; pests of host-trees of, 128, 129.

Lacerta agilis, observations on, in Russia, 407.

Lachnosterna, in U.S.A., 32, 340, 376, 423, 425 ; depth of pupation of species of, in Kentucky, 592, 593 ; in W. Indies, 24, 84, 181, 238 ; plants attacked by, 24, 238, 376, 425 ; studies on bionomics and ecology of, 32, 376 ; natural enemies of, 84, 423 ; measures against, 32, 340, 376, 425.

Lachnosterna bipartita, in Kentucky, 593.

Lachnosterna clypeata, Scoliid parasites of, on sugar-cane in Florida, 657.

Lachnosterna crassissima, on wheat in Kansas, 376.

Lachnosterna diomphalia, on soy beans in Manchuria, 340.

Lachnosterna fusca, in U.S.A., 32, 593.

Lachnosterna futilis, in Kentucky, 592, 593.

Lachnosterna hirticula, in U.S.A., 32, 592, 593 ; trees attacked by, 32.

Lachnosterna horishana, bionomics of, on sugar-cane, etc., in Formosa, 363.

Lachnosterna implicita, on willows and poplars in Wisconsin, 32.

Lachnosterna inversa, in Kentucky, 592, 593.

Lachnosterna jamaicensis, on egg-plant in Jamaica, 239.

Lachnosterna lanceolata, on wheat in Kansas, 376.

Lachnosterna latifrons, Scoliid parasites of, on sugar-cane in Florida, 657.

Lachnosterna morosa, on soy beans in Manchuria, 340.

Lachnosterna rubiginosa, on *Sorghum* and wheat in Kansas, 376.

Lachnosterna rugosa, on trees and shrubs in Wisconsin, 32.

Lachnosterna sinensis, bionomics and control of, on tea in Formosa, 447.

- Lachnosterna smithi*, natural enemies and biological control of, on sugar-cane in Mauritius and W. Indies, **611, 660, 670**.
- Lachnosterna tristis*, on oak in Wisconsin, **32**.
- Lachnus salignus*, new parasite of, on willow in Japan, **615**.
- Lachnus tropicalis*, parasite of, on chestnut in Japan, **615**.
- Lacon murinus*, feeding habits of larvae of, in Germany, **398**; on cabbage in Siberia, **679**.
- Lacon musculus*, ecology of, in sugar-cane fields in Formosa, **206**.
- Lacon setiger*, ecology of, in sugar-cane fields in Formosa, **206**.
- Lacon variabilis*, on sugar-cane in Queensland, **185**.
- lacteella*, *Endrosis*.
- Lactic Acid, for treating flour from grain attacked by Pentatomids, **353**.
- Lactuca scariola*, destruction of, against *Hercothrrips fasciatus* in California, **240**.
- lactucae*, *Amphorophora*; *Myzus* (see *Macrosiphum ribicola*).
- Laemophloeus*, measures against, in oil-palm kernels in Dahomey, **349**.
- Laemophloeus ferrugineus*, importance and control of, in flour mills in Russian Union, **685**.
- Laemophloeus minutus*, in stored grain in U.S.A., **341**.
- Laemophloeus testaceus*, importance and control of, in flour mills in Russian Union, **685**.
- Laevicephalus collinus*, on wheat in Central Asia, **453**.
- Laevicephalus striatus*, on wheat in Central Asia, **453**.
- laevigatus*, *Camponotus*.
- lafauriana*, *Tortrix* (*Cacoecia*).
- Lagochirus funestus*, utilisation of, against *Opuntia* spp. in Queensland, **345**.
- lajori*, *Apleurotropis*.
- lambens*, *Sarcophaga*.
- Lampides boetica* (see *Cosmolyce*).
- Lamprosema blackburni*, utilisation of parasite of, on coconut in Hawaii, **367**.
- Lamtoro* (see *Leucaena glauca*).
- Lampyrus noctiluca*, failure to establish, against *Helix aspersa* in Australia, **546**.
- lanceolata*, *Lachnosterna* (*Phyllophaga*).
- langei*, *Apanteles*.
- langi*, *Buprestis*.
- lanigera*, *Oregma* (*Ceratovacuna*).
- lanigerum*, *Eriosoma* (*Schizoneura*).
- Lantana*, insects attacking, in India, **212, 612**; distribution of *Teleonemia lantanae*, against, in Pacific Islands, **212, 366**; *Tribolium destructor* imported into Britain from Italy in seed of, **623**.
- Lantana camara*, establishment of *Teleonemia lantanae* against, in Australia, **546, 603**.
- lantanae*, *Agromyza* (*Ophiomyia*); *Teleonemia*.
- lanuginosum*, *Eriosoma*.
- lapathi*, *Cryptorrhynchus* (*Sternochetus*).
- Laphygma exempta*, measures against, on sugar-cane in Hawaii, **368**; damaging cereals and pastures: outbreak of, in Kenya, **666**; in Nyasaland, **126**; in Queensland, **263, 603**; in S. Rhodesia, **124**; parasites of, **126, 263, 666**; fungi and bacteria infesting, **268, 666**.
- Laphygma exigua*, confused with *Heliothis armigera* on tomato in California, **431**; on ramie in Transcaucasia, **587**.
- Laphygma frugiperda*, natural enemies of, on maize in Porto Rico, **503**; on lucerne and sugar-cane in U.S.A., **67, 657**; tests of oil baits for, **67**.
- lapidarius*, *Biscirus*.
- Lapland, Aphids of, **512**.
- Larch (*Larix*), restrictions on importation of, into Britain, **356**; pests of, in Czechoslovakia, **469**; pests of, in Germany, **7, 216-218, 400, 401**; pests of, in Quebec, **464**; *Enarmonia diniana* on, in Switzerland, **169**; pests of, in U.S.A., **461, 599**; *Acantholyda erythrocephala* not observed on, in U.S.A., **651**; effect of feeding *Lymantria moncha* on, **399**; dinitro-o-cresol dusts causing injury to, **400**.
- lardarius*, *Dermestes*.
- laricinus*, *Exenterus*.
- laricis*, *Marlattia*; *Platycampus*; *Pristiphora* (*Lygaeonematus*, *Nematus*).
- laricivorus*, *Platycampus*.
- Lariophagus distinguendus* (*utibilis*), parasite of *Sitodrepa panicea* in Germany, **8**; bionomics and rearing of, parasitising *Calandra* spp. in Italy and Russia, **199, 304, 551**; *L. utibilis* considered distinct from, **199**.
- Larix* (see Larch).

- Larra americana* (parasite of *Scapteriscus vicinus*), introduction of, into Porto Rico from Brazil, **85, 435**; bionomics and distribution of, **85**.
- Larrea, Protargionia larreae* on, in Argentina, **23**.
- larreae, Protargionia*.
- Lasioderma serricorne* (in stored tobacco), in Cyprus, **270**; bionomics of, in Italy, **234**; in Japan, **210**; natural enemies of, in Mauritius, **611**; in S. Rhodesia, **125**; in Virginia, **380**; in imported beans in Germany, **521**; in stored cumin seed, **270**; *Tenebroides mauritanicus* associated with, **270**; measures against, **125, 235, 380**.
- Lasiothricus pyrastris* (predacious on Aphids), bionomics and morphology of, in Britain, **628, 629**; in Utah, **30**.
- Lasioptera*, on olive in Greece, **453**.
- Lasiosina cinctipes*, parasites of, on barley, in Britain, **562**.
- Lasius niger*, in Germany, **112**; resistance to arsenicals of females of, **112**.
- Lasius niger alienus*, associated with Aphid on rubber-producing plants in Russia, **44**; measures against, **44**.
- Lasius niger* var. *sitkaënsis*, in rotten wood in U.S.A., **498**.
- Laspeyresia* (see *Cydia*).
- lata, Amorphaidea*.
- lataniae, Aspidiotus (Diaspidiotus)*.
- lateralis, Eutochia*.
- laterimaculata, Saperda*.
- Lathyrus odoratus* (see Sweet Pea).
- latifrons, Lachnosterna (Phyllophaga)*.
- latipes, Xylocopa*.
- latipetiolator, Phygadeuon*.
- laticarpus, Cheiloneurus*.
- latistriga, Parasa*.
- latiuscula, Cirphis*.
- latus, Corymbites (Selatosomus)*.
- Latvia, *Apion seniculum* on *Trifolium hybridum* in, **47**; lists of pests in, **47**.
- latysiphon, Rhopalosiphoninus*.
- laurenti, Heteroderes*.
- Lauryl Rhodanate (see Thiocyanates).
- Lawns (see Turf).
- Lead, *Xylocopa latipes* boring in, in India, **337**; problem of residues of, on fruit, **139, 168, 188-190, 432, 539, 642**.
- Lead Arsenate, against beet pests, **283, 639**; against cereal pests, **376, 441**; against pests of *Citrus*, **330, 331**; coffee painted with, against stem borers and termites, **271**; against cotton pests, **137, 243, 246, 271, 414, 417, 661**; against pests of forest and shade trees, **28, 53, 74, 177, 279, 386, 420, 461, 529, 532, 540, 645, 663, 664**; against orchard pests, **20, 21, 52, 66, 70, 89, 97, 98, 132, 133, 166, 168, 186, 188, 192, 197, 207, 235, 272, 273, 279, 292, 293, 300, 301, 361, 376, 383, 390, 419, 420, 430, 432, 450, 525, 534, 536, 579, 642, 643, 653, 662**; against pests of solanaceous plants, **17, 63, 125, 186, 379, 390, 431, 583, 634**; against Geometrid on tung-oil tree, **614**; against vine pests, **164, 516**; against pests of other crops, **25, 82, 271, 277, 426, 450**; against Lamellicorn larvae in soil, **376, 425, 447, 533**; tests of toxicity of, to insects, **17, 137, 243, 246, 277, 420, 421, 528, 627, 634**; resistance of strains of *Cydia pomonella* to, **343**; in baits, **186, 379, 390**; in bait-sprays, **300, 301**; dusting with, **17, 25, 82, 186, 187, 246, 277, 383, 390, 417, 421, 431, 634, 639**; carriers for, **277, 431**; formulae for, in sprays, **17, 28, 52, 53, 66, 89, 97, 125, 132, 137, 164, 166, 177, 186, 192, 235, 271, 279, 283, 293, 330, 376, 383, 390, 414, 420, 430, 432, 450, 461, 529, 534, 536, 540, 663**; new method of spraying with, **383**; autogiro for applying, **74, 75, 645**; adhesives and spreaders for, **28, 52, 53, 70, 74, 166, 177, 189, 207, 208, 235, 279, 330, 383, 430, 525, 540, 642, 645, 661**; factors concerned in deposits and retention of sprays of, **52, 272, 273, 412, 539**; and Bordeaux mixture, **125, 139, 188, 192, 207, 235, 534, 584, 643, 653**; and other copper compounds, **421, 534**; and lime, **430, 534**; and lime-sulphur, **52, 139, 536**; and nicotine, **125, 133, 279, 292, 432, 529, 536**; and oils, **28, 139, 166, 188, 190, 192, 293, 376, 426, 430, 432, 461, 529, 536**; and pyrethrum, **28, 536, 663**; and sulphur, **52, 139, 383, 534, 662**; thiuram sulphides compatible with, **532**; and injury to plants, **82, 532, 536**; effect of, on

- quality of orange fruit, **330, 331** ; problem of residues of, **139, 168, 188-190, 193, 273, 293, 430, 432, 539, 642** ; question of danger of, to birds, **159** ; other insecticides compared with, **17, 66, 97, 98, 166, 177, 197, 246, 273, 419, 421, 441, 532, 536, 540, 593, 627, 634**.
- Leaf-cutting Ants (see *Acromyrmex* and *Atta*).
- Leaf-miners of Moravia, **145**.
- Leafhopper, Beet (see *Eutettix tenellus*).
- Leafhopper, Glasshouse (see *Erythroneura pallidifrons*).
- Leafhopper, Potato (see *Empoasca fabae*).
- Leafhopper, Six-spotted (see *Macrostelus divinus*).
- Leather Jackets (see *Tipula* spp.).
- Lebeda nobilis*, on oaks in China, **360**.
- lecanii*, *Coccophagus* (see *C. lycimnia*) ; *Muscideopsis*.
- Lecanium*, on plum in Czechoslovakia, **468**.
- Lecanium bulgariense*, sp. n., bionomics and control of, on roses in Bulgaria, **402**.
- Lecanium corni*, measures against, on vines in Germany, **103** ; reduced importance of, on plum in Central Europe, **690** ; on *Robinia* and fruit trees in Uzbekistan, **474** ; physiological factors influencing mass increase of, **112, 113, 507**.
- Lecanium coryli* var. *turanicum*, on fruit trees in Uzbekistan, **474**.
- Lecanium hesperidum* (see *Coccus*).
- Lecanium kunoense*, susceptibility of varieties of *Ulmus propinqua* to, in Japan, **443**.
- Lecanium longulum* (see *Coccus*).
- Lecanium persicae*, in Australia, **294, 365** ; on vines, **365** ; new parasite of, **294**.
- Lecanium pruinatum*, measures against, on walnut in California, **649**.
- Lecanium prunastri*, on fruit trees in Uzbekistan, **474**.
- Lecanium rugulosum*, on fruit trees in Uzbekistan, **474**.
- Lecanium unifasciatum*, on peach and almond in Uzbekistan, **474**.
- lecontei*, *Agonoderus* ; *Diprion* (*Neodiprion*).
- Leefmansia bicolor*, liberation of, against *Sexava* in New Guinea Territory, **277**.
- Leek, *Hylemyia antiqua* on, in Britain, **675**.
- lefyoyi*, *Microbracon*.
- legitima*, *Polia*.
- leguminosae*, *Aphis* (see *A. laburni*).
- Lema bilineata*, on tobacco in S. Africa, **360**.
- Lema oryzae*, measures against, on rice in Japan, **440** ; in Manchuria, **361**.
- Lemon, pests of, in California, **55, 343, 377, 425, 432, 433, 460** ; Geometrid on, in Sicily, **630** ; tartar emetic sprays causing slight injury to, **425** ; (fruit), in baits for cutworms, **387, 390**.
- Lemon Chrome (see Barium Chromate).
- leperii*, *Epidiaspis*.
- Lepidiota albohirtum* (see *Lepidoderma*).
- Lepidiota caudata*, damaging pastures in Queensland, **603**.
- Lepidiota frenchi*, on sugar-cane in Queensland, **88, 186** ; measures against, **88**.
- Lepidium alyssoides*, relation of *Eutettix tenellus* to, in U.S.A., **593, 594**.
- Lepidoderma albohirtum*, in Queensland, **88, 185, 294, 603** ; on sugar-cane, **88, 185** ; on maize, **603** ; on forest trees, **185** ; parasite of, **294** ; establishment of *Bufo marinus* against, **185** ; other measures against, **88**.
- Lepidoglyphus destructor*, in stored grain in Russian Union, **312, 585, 685** ; not surviving under field conditions, **312** ; factors affecting production of hypopi in, **585** ; measures against, **685**.
- Lepidopterous Larvae, physiology of senses of, **7**.
- Lepidosaphes*, measures against, on *Citrus* in Egypt, **509** ; revision of Italian species of, **511**.
- Lepidosaphes beckii* (on *Citrus*), in Argentina, **23** ; in Cyprus, **270** ; in Egypt, **509** ; bionomics of, in Transcaucasia, **148, 149** ; in U.S.A., **256, 257, 460** ; effect of spray residues on populations of, **257** ; measures against, **23, 460, 509**.
- Lepidosaphes gloveri*, on *Citrus* in Transcaucasia, **148, 150** ; bionomics of, **148, 149** ; measures against, **150**.

- Lepidosaphes tubulorum*, susceptibility of varieties of *Ulmus propinqua* to, in Japan, 443.
- Lepidosaphes ulmi* (on fruit trees), bionomics of, in W. Australia, 130; on elms in Japan, 443; in Manchuria, 340; in U.S.A., 432, 534; measures against, 130, 432, 534.
- Lepidosaphes zlocistii*, on fruit trees in Uzbekistan, 474.
- Lepisma*, infesting house insulation in U.S.A., 640.
- Lepisma saccharina*, treatment of books against, in Fiji, 366.
- Leptacis tipulae*, parasite of wheat gall-midges in Holland, 269.
- Leptinotarsa decemlineata* (Potato Beetle), in Belgium, 106, 583; legislation against introduction of, into Britain, 356; in Br. Columbia, 67; in France, 106, 107, 169, 194, 349, 350, 357, 358, 583, 584, 622, 634, 675; in Germany, 48, 100, 106, 158, 160, 354, 512, 583; in Holland, 62, 106, 269, 583; in Luxemburg, 106, 583; in Switzerland, 106, 350, 583; in U.S.A., 70, 134, 421; danger of spread of, into Italy and Spain, 583; bionomics of, 106, 349, 584, 622; natural enemies of, 100, 107, 194, 354; susceptibility of varieties of potato to, 158, 193; effect of species and hybrids of *Solanum* on, 107, 158, 169, 357, 358; experiment with, on tomato, 113; definition of focus of infestation by, 107; larval instars of, 584; measures against, 62, 67, 70, 106, 107, 158, 159, 349, 421, 583, 634; international conference on control of, 106; susceptibility of, to hydrocyanic acid gas, 605; magnesium sulphate ineffective against, 134.
- Leptispa pygmaea*, measures against, on rice in Mysore, 291.
- Leptocoris trivittatus*, in Canada, 374; bionomics and control of, in Kansas, 374.
- Leptocorisa*, *Catascopus facialis* attacking, 642.
- Leptocryptus pellucidator*, hyper-parasite of *Diprion similis* in Poland, 671.
- Leptoglossus*, vector of *Nematospora*, 389.
- Leptoglossus australis*, on pumpkin in Fiji, 641.
- Leptomastix*, African species of, 503.
- Leptomastix*, African species of, 40, 503.
- Leptomastix bifasciatus*, sp. n., parasite of *Pseudococcus* in Tanganyika and S. Africa, 40.
- Leptomastix dactylopii*, causes of immunity of certain mealybugs from, 598.
- Leptomastix nigrum*, sp. n., parasite of *Pseudococcus* in Transvaal, 40.
- Leptomastix phenacocci*, sp. n. (parasite of *Phenacoccus hirsutus*), introduced into Egypt from Java, 506.
- Leptothrips mali*, predacious on insects in Louisiana, 372.
- Leptozele* (see *Macrocentrus*).
- Leskia aurea*, parasite of *Aegeria typhiaeformis* in Italy, 4, 629, 630; in France and Sweden, 629; doubtfully parasitic on *Cydia pomonella*, 4; bionomics of, 629, 630.
- Lespedeza*, *Horistonotus uhleri* on, in S. Carolina, 500.
- Lestodiplosis pini*, predacious on *Chermes* spp. in Britain, 262, 263; proposed introduction of, into Australia, 263; predacious on *Leucopis obscura*, 263.
- Lethane, 463. (See Thiocyanates.)
- Lethane Spreader, for derris and cubé sprays, 30.
- Lettuce, restrictions on importation of, into Australia against *Pieris rapae*, 344; Aphids on, in Britain, 671, 672; *Phytomyza atricornis* on, in Japan, 444; *Macrosteles divinus* on, in New Jersey, 536; *Forficula auricularia* on, in Ontario, 601; experiments with insects and, 398, 423, 459, 519; insects and virus diseases of, 536, 546, 671.
- Leucaena glauca*, pruning of, against *Pseudococcus citri* in Java, 161.
- Leucodesmia*, parasite of *Gelechia cercerisella* in Kansas, 376.
- Leucodiaspis archangeliskyae*, on fruit trees in Uzbekistan, 474.
- leucoloma*, *Naupactus*.
- leucomelas*, *Anophia*.
- leuconotus*, *Anthores*.
- leucophaearia*, *Erannia*.
- Leucopholis irrorata* (Sugar-cane Beetle), intercepted in Hawaii in aeroplane from Philippines, 368.
- leucophthalmus*, *Philaenus*.
- Leucopis griseola*, bionomics of, attacking Aphids in India, 228.

- Leucopis obscura*, predacious on *Chermes* spp. in Britain, 262, 263; proposed introduction of, into Australia, 263; natural enemies of, 263.
- Leucoptera*, measures against, on coffee in Tanganyika, 126; parasites of, 127.
- Leucoptera coffeella*, (on coffee), ecology of, in Tanganyika, 127; *Mirax* introduced into Porto Rico from Guadeloupe against, 435; in St. Lucia, 435.
- Leucoptera daricella*, ecology of, on coffee in Tanganyika, 127.
- Leucoptera scitella*, on apple in Uzbekistan, 623.
- leucopterus*, *Blissus*.
- leucospoides*, *Ibalia*.
- leucostigma*, *Hemerocampa*.
- leucostoma*, *Cydia* (*Laspeyresia*).
- Leucotermes tenuis* (see *Heterotermes*).
- leucotreta*, *Argyroplote*.
- leucurus*, *Aesiotes*.
- leverii*, *Phaenocarpa*.
- levis*, *Trionymus*.
- Levuana iridescens*, parasite of, on coconut in Fiji, 212.
- libatrix*, *Scoliopteryx*.
- Libocedrus decurrens*, Scolytids on, in U.S.A., 324.
- librinocens*, *Neogastrallus*.
- Libya, locusts in, 478, 481.
- Licuri Palm (see *Cocos coronata*).
- Licurioba Palm (see *Cocos vagans*).
- Light, influence of: on forms of *Aphis chloris*, 59; on feeding of Lamellicorn beetles, 338; on locusts, 603, 604; on derris deposits, 69, 241.
- Light (Artificial), insects attracted to, 22, 209, 364, 463, 465; reactions of insects to types of, 31, 441, 442.
- Light-traps, for Lepidoptera, 25, 26, 31, 32, 172, 348, 441, 592; for other insects, 50, 95, 164, 340, 501; electrocuting types of, 31.
- lignosellus*, *Elasmopalpus*.
- Ligyus gibbosus*, on garden plants in Kansas, 376.
- Ligyus tumulosus*, on egg-plant in Jamaica, 239.
- Lilac (*Syringa*), *Cantharis obscura* on, in France, 623; Aphid migrating to *Abies* from, in Japan, 211.
- lilacinus*, *Pseudococcus*.
- Lilies (*Lilium*), *Lilioceris lilii* on, in France, 268; pests of, in Germany, 267, 686; pests of, in Japan and Korea, 50, 419, 617; *Rhizoglyphus hyacinthi* on, in U.S.A., 419; *Aphis frangulae* transmitting virus disease of, 686; heat treatment causing injury to bulbs of, 617.
- Lilioceris lilii*, bionomics of, on lily in Germany and France, 267, 268.
- liliorus*, *Hoplothrips* (*Trichothrips*).
- Lima Bean Pod Borer (see *Etiella zinckenella*).
- Lima Beans, *Diacrisia obliqua* on, in China, 129; pests of, in Porto Rico, 435, 501; pests of, in U.S.A., 381, 595; susceptibility of varieties of, to pests, 501, 595; problem of fluorine residues on, 595.
- limacina*, *Caliroa* (*Eriocampoides*).
- Limax agrestis*, possible host of *Hexamermis* in Germany, 100.
- limbata*, *Brontispa*.
- limbatum*, *Agonum* (see *A. pallipes*).
- Lime (*Citrus*), pests of, in Grenada, 25.
- Lime (*Tilia*), *Ceresa bubalus* on, in France, 689; *Caliroa annulipes* on, in Germany, 204.
- Lime, use of, against *Aphomia gularis*, 521; dusting with, against cacao thrips, 24; as a carrier for dusts, 71, 177, 187, 213, 246, 247, 258, 261, 277, 283, 342, 370, 371, 372, 380, 418, 426, 461, 497, 661; as a repellent, 24, 299, 340, 420, 532, 533, 665; addition of, to arsenicals sprays, 158, 172, 189, 283, 421, 430, 438, 451, 534, 634, 664, 683; addition of, to other sprays (see also Bordeaux Mixture), 158, 256, 257, 532, 634; relation of, to spray residues on apples, 189, 190; formulae containing, 71, 172, 177, 187, 189, 213, 246, 247, 256, 257, 283, 342, 370, 372, 380, 418, 425, 426, 430, 438, 461, 497, 532, 534, 644, 683.
- Lime-sulphur, unsatisfactory against *Bemisia gossypiperda*, 560; against *Chermes abietis*, 529; against Coccids, 23, 34, 128, 130, 432, 433, 460, 529, 530, 690; effect of residues of, on Coccid populations, 257; apparently repellent to *Conotrachelus nenuphar*, 383; against mites, 2, 57, 164, 187, 256, 365, 409, 429, 433, 460; effects of, against *Paratrioza cockerelli* on tomato, 72, 73, 79, 651; against

- thrips, 14, 433, 460, 666; formulae for, 2, 23, 72, 79, 130, 164, 187, 257, 278, 343, 365, 409, 432, 460, 498, 529, 530, 664, 666, 690; formulae containing, 52, 57, 432, 460, 498, 664; and aluminium sulphate with lime, 257; and arsenicals, 52, 139, 421, 664; effect of, on lead-arsenate spray residues, 139; and ferrous sulphate, 460; and nicotine sulphate, 292, 429, 498, 536; and oil emulsions, 57, 409, 430, 432, 433, 460, 536; and pyrethrum, 536; and sulphur, 57, 433, 460, 534; thiocyanate compatible with, 259; factors affecting injury to *Citrus* by, 278, 460.
- liminaris*, *Phloeotribus* (*Phthorophloeus*).
- Limonius* (see *Pheletes*).
- Limothrips cerealium* (on cereals), in Holland, 269; and bionomics of, in Sweden, 121.
- Limothrips denticornis*, bionomics of, on cereals in Sweden, 121.
- Limothrips schmutzi*, doubtful vector of virus disease of sugar sorghum in Italy, 472.
- linarius*, *Thrips* (see *T. lini*).
- linearis*, *Atomaria*; *Lyctus*; *Oberea*.
- lineata*, *Celerio*; *Sitona*.
- lineatella*, *Anarsia*.
- lineaticollis*, *Antestia*.
- lineatus*, *Agriotes*.
- lineolata*, *Diatraea*.
- lineolatus*, *Adelphocoris*.
- lini*, *Thrips*.
- Linoclostis gonatias*, on tea, etc., in Formosa, 447.
- Linseed (see Flax).
- Linseed Oil (see Oil, Linseed).
- Linum usitatissimum* (see Flax).
- Liocola brevitarsis*, in manure in sugar-cane fields in Formosa, 446.
- Liothrips urichi*, attempted introduction of, into Solomon and Shortland Is. against *Clidemia*, 366.
- Liothrips vaneeckei*, on lily bulbs in Japan and Korea, 50.
- liparidis*, *Apanteles*.
- Liparis chrysorrhoea*, auct. (see *Nygmia phaeorrhoea*).
- Liparis monacha* (see *Lymantria*).
- Liposcelis divinatorius*, in houses and ground feed in U.S.A., 648, 650; measures against, 648.
- Lissonata cylindratior*, parasite of *Trachea secalis* in Scotland, 122.
- Lissonota sulphurifera*, parasite of *Trachea secalis* in Scotland, 122.
- Lissopimpla semipunctata*, parasite of cutworms in New South Wales, 279.
- Listroderes obliquus* (on vegetables and tobacco), in Queensland, 186; in U.S.A., 249, 327, 372, 599; bionomics and control of, 186, 372; tests of insecticides on, 249.
- Lita solanella* (see *Phthorimaea operculella*).
- Litchie, *Lobesia aeolopa* on, in Formosa, 340.
- Lithocolletis*, weight of foliage in relation to, 143.
- Lithocolletis platani*, parasites of, on *Platanus* spp. in Turkey, 219.
- Lithosia deplana* (see *Eilema depressa*).
- litura*, *Prodenia*.
- livida*, *Cantharis*.
- lividicorpus*, *Eurydinota*.
- lividigaster*, *Scymnodes*.
- Lixophaga diatraeae* (parasite of *Diatraea saccharalis*), further attempts to establish, in U.S.A., 658; distribution and utilisation of, in W. Indies, 182, 183, 502, 658, 659, 660; not parasitic on *D. canella*, 182; ecology of, 659.
- Lixus*, new parasite of, in India, 506.
- Lixus junci*, bionomics and control of, on beet in Morocco, 283.
- Lixus truncatulus*, new parasite of, in India, 506.
- Lizards, destroying noxious insects, 48, 394, 407; damaging trap-ditches in beet fields, 407.
- Lloyd's Reagent, nicotine sulphate adsorbed by, 133.
- Lobesia aeolopa*, on tea and litchie in Formosa, 339, 340.
- Loblolly Pine (see *Pinus taeda*).
- Locust, Bamboo (see *Ceracris kiangsu*).
- Locust, Lubberly (see *Romalea microptera*).
- Locust, Moroccan (see *Dociostaurus maroccanus*).
- Locust, Red (see *Nomadacris septemfasciata*).
- Locust, Rocky Mountain (see *Melanophus mexicanus*).
- Locusta migratoria*, in India, 291, 484, 559, 560; in Poland, 9, 403; breeding areas and ecology of, in Russia, 109, 146, 553; plants attacked by, 291, 559, 560; phases and migrations of, 109, 284, 559, 560; effects of temperature, humidity and light on, 146, 553, 554, 603, 604; tests of insecticides on, 309, 310.

- Locusta migratoria capito*, in Madagascar, 14, 62, 478; bionomics of, 14, 62; measures against, 62.
- Locusta migratoria manilensis* (*migratorioides*, auct.), in China, 450, 451, 477, 486; in Netherlands Indies, 478, 486; in Philippines, 451, 478, 485, 486; probable range of spread of, from Philippines, 486; plants attacked by, 451; factors affecting outbreaks of, 485; measures against, 450, 477, 478.
- Locusta migratoria migratorioides*, 480, 483; in Italian E. Africa, 478, 570; in Portuguese E. Africa, 479; in Fr. W. Africa, 11-14, 280, 477, 478, 480, 482, 570, 571; in Belgian Congo, 476; in Sierra Leone, 271; in Sudan, 479, 481; in Uganda, 482; outbreak centres of, 11-14, 480, 482; growth and ecdysis in, 264, 456; other bionomics of, 11-14, 264; experiments with *Beauveria bassiana* and, 92; measures against, 477, 478.
- Locustana pardalina*, in Portuguese E. Africa, 479; bionomics of, in S. and S.W. Africa, 92, 93, 393, 394; measures against, 92, 93.
- locustarum*, *Eutrombidium*.
- Locusts and Grasshoppers, in E. Africa, 62, 126, 387, 388, 478, 479, 480, 482, 484, 570, 571; in Fr. N. Africa, 478, 480, 572; in S. Africa, 91, 92, 93, 345, 393, 666; in S.W. Africa, 93, 394; in W. Africa, 11-14, 271, 280, 476, 477, 478, 480, 481, 482, 483, 486, 487, 571; in Arabia, 480, 481, 482; in Argentina, 213, 214, 476, 543; in Australia, 56, 57, 130, 291, 476, 545, 602; in Canada, 476, 477, 485, 543, 600; in China, 450, 451, 477, 486; in Cyprus, 270; in Egypt, 481; in Greece, 478; in India, 291, 484, 485, 559, 560, 577, 624; in Netherlands Indies, 478, 486; in Japan, 618; in Jugoslavia, 479; in Korea, 557; in Libya, 478, 481; in Madagascar, 14, 62, 478, 543, 571; in Paraguay, 543; in Persia, 482; in Philippines, 451, 478, 485, 486; probable range of spread of, from Philippines, 486; in Poland, 9, 403; in Portugal, 479; in N. Rhodesia, 483, 484; in S. Rhodesia, 124, 125, 637; in Russian Union, 109, 145, 146, 153, 160, 320, 321, 386, 553, 627; key to, of W. Siberia, 694; in Spain, 477; in Anglo-Egyptian Sudan, 479, 480, 481; in U.S.A., 32, 33, 48, 67, 75, 76, 134, 138, 139, 178, 240, 341, 376, 427, 485, 537, 569, 598, 646, 654, 655; international conference on, 475-486; phases of, 11, 12, 13, 48, 93, 321, 387, 388, 393, 394, 480-487, 522, 545, 560, 569, 570, 571; colour variations and anatomy of, 48, 387, 482, 483, 486, 512, 545, 570; breeding centres and ecology of, 11-14, 62, 93, 109, 321, 386, 387, 388, 393, 394, 477, 479-487, 545, 553, 570, 571; migrations of, 33, 109, 126, 291, 386, 387, 388, 394, 478, 479, 481, 484, 485, 487, 559, 560, 646, 666; maps illustrating invasion areas of, 476, 477, 478, 481, 482, 483; effects of temperature, humidity and rainfall on, 11-14, 41, 93, 145, 146, 291, 345, 393, 394, 477, 479, 480, 481, 483, 484, 485, 487, 545, 553, 569, 603; correlation of outbreaks of, with sunspots, 485; reaction of, to light, 603; growth and ecdysis of, 264; effects of deficient diets on, 604; respiration of, 104; birds destroying, 387; insect enemies of, 56, 75, 214, 387, 394, 477, 545; *Helicobia australis* not a parasite of, 57; mites infesting, 75, 376; fungi infesting, 75, 91, 92, 145, 427; Mermithid parasites of, 75, 76, 214; other organisms in, 486; surveys and estimation of populations of, 76, 153, 160, 320, 387, 393, 569; measures against (see also under Baits), 9, 62, 92, 93, 214, 450, 476, 477, 478, 479, 557, 618, 624, 655; financial loss due to and expenditure on control of, 130, 292, 476, 477, 478, 480, 481; tests of insecticides on, 309, 310, 627; reviews of problems of, 336, 572.
- Lolium*, *Hyperodes griseus* on, in New Zealand, 547; *Pediculopsis graminum* on, in Russian Union, 151.
- Lomaspora* (see *Arabis*).
- Lonchaea aristella*, intercepted in figs in Russian Union, 440.
- Lonchocarpus*, cultivation of, for insecticides in Belgian Congo, 294; survey of data on, as an insecticide, 104. (See Cubé.)
- longana*, *Cnephasia*.

- longicaudata*, *Ctenolepisma*.
longicaudatus, *Biosteres* (*Opius*).
longiclavus, *Pagiophloeus*.
longicorne, *Stromatium*.
longicornis, *Paratrechina* (*Prenolepis*); *Scolothrips*.
 Longicorns, catalogue and data on biology of, in India, Burma and Ceylon, **612**.
longipennis, *Dissosteira*; *Eirenephilus*.
longirostris, *Ischnaspis*; *Rhynchocoris*.
longispina, *Bemisia*.
longispinus, *Pseudococcus* (see *P. adonidum*).
Longitarsus, on ramie in Transcaucasia, **587**.
longitarsus, *Amblynotus*; *Cotinis*.
longulus, *Coccus* (*Lecanium*).
Lonicera, *Rhagoletis cerasi* not attracted by extracts of, **297**.
Lonicera morrowii, Aphids on, in Japan, **104, 211**.
 Loochoo Islands, pests of sweet potato in, **444, 616**.
lopezi, *Eudeleboea*.
Lophosia fasciata, parasite of *Aelia acuminata* in Germany, **64**; not found in E. Prussia, **632**.
Lophyrus (see *Diprion*).
 Loquat, Lepidoptera on, in Formosa and Japan, **206, 207**; breeding experiments with *Dacus ferrugineus tryoni* on, in Queensland, **345**.
loreyi, *Cirphis*.
loricata, *Ulobaris*.
 Lorol Alcohol, spray formula containing, **532**.
 Louisiana, cotton pests in, **246, 341, 372, 538**; pests of crucifers in, **250, 254, 370, 371, 372, 373**; pests of pecan in, **255, 372**; *Anticarsia gemmatilis* on soy beans in, **258, 371, 373, 422**; sugar-cane pests in, **143, 248, 371, 372, 378, 657, 658**; *Cylas formicarius* on sweet potato in, **373, 379, 539, 644**; miscellaneous pests in, **248, 370, 537, 599**; *Listroderes obliquus* in, **250, 372**; legislation against *Naupactus* spp. in, **275**; Thysanoptera of, **372**; beneficial insects and biological control in, **143, 372, 373, 378, 538, 656, 658, 659**.
lounsburyi, *Aspidiotiphagus*.
Loxostege sticticalis, in Kansas, **376**; migrations of, in Saskatchewan, **27**; in Russian Union, **44, 109, 146, 306, 307, 313, 455, 680**; food-plants of, **44, 307, 313, 376, 680**; effects of temperature and humidity on, **146, 455**; race of *Trichogramma evanescens* parasitising, **109**; experiments with fungi against, **306, 307**; beet protecting *Scorzonera* against, **680**; other measures against, **313, 376**.
 Lubberly Locust (see *Romalea microptera*).
lubripeda, *Diacrisia* (*Spilosoma*).
 Lucerne, grasshopper damaging, in Argentina, **214**; *Contarinia medicaginis* on, in Germany, **457**; *Smynthurus viridis* on, in New Zealand, **550**; pests of, in Russian Union, **108, 215, 216, 305, 474, 475, 552**; *Ceresa bubalus* on, in Switzerland, **169**; pests of, in U.S.A., **30, 31, 32, 67, 323, 370, 378, 381, 423, 427, 462, 599**; cutworms on, in Victoria, **390**; relation of *Lygus* spp. to seed production of, **462**; time of sowing and harvesting of, in relation to weevils, **108, 109, 371**.
 Lucerne Flea (see *Smynthurus viridis*).
 Lucerne Flower Gall-midge (see *Contarinia medicaginis*).
 Lucerne Leaf Bug (see *Adelphocoris lineolatus*).
Lucilia, suitability of, as host for *Trichogramma evanescens*, **36**.
lucorum, *Lygus*; *Zenillia* (*Carcelia*).
luctuosus, *Oxycarenus*.
Ludius aeripennis (see *Corymbites*).
luminosus, *Pyrophorus*.
lunata, *Membracis* (see *M. foliata*).
luniger, *Syrphus*.
Luperina testacea, on wheat in Denmark, **117**.
Luperodes quadriguttatus, on soy beans in Manchuria, **340**.
 Lupins (*Lupinus* spp.), *Cantharis obscura* on, in France, **623**; Aphids and virus disease of, in Germany, **686, 687, 688**; *Etiella zinckenella* on, in Iberian Peninsula, **495**; *Bruchus cisti* on, in Italy and Sicily, **201, 495**; pests of, in Russia, **150, 151, 683**; susceptibility to pests of species and varieties of, **150, 151, 495**.
luridula, *Anomis*.
luridus, *Troilus*.
lutaria, *Sialis*.
luteola, *Galerucella*.
luteovaria, *Urochela*.
lutescens, *Phonoctonus*.
luteum, *Trichogramma*.

- Luxemburg, *Leptinotarsa decemlineata* on potato in, 106, 583 ; legislation against introduction of *L. decemlineata* into Britain from, 356.
- lybica*, *Empoasca*.
- lycimnia*, *Coccophagus*.
- Lycium* spp., *Paratrioza* spp. on, in U.S.A., 422, 423, 651.
- lycopersicella*, *Phthorimaea* (*Gnori-moschema*).
- lycopersici*, *Eriophyes* ; *Phyllocoptes*.
- Lycophotia praecox*, on soy beans in Manchuria, 340.
- Lycophotia saucia* (see *Peridroma*).
- Lyctus* (in timber), in Burma, 693 ; in U.S.A., 499.
- Lyctus brunneus* (in timber), in S. Africa, 60 ; in Australia, 509 ; treatment of timber against, 509.
- Lyctus linearis* (*canaliculatus*), damaging floors in Czechoslovakia, 469.
- Lyctus tomentosus*, measures against, in furniture in Jamaica, 181.
- Lydella nigripes*, parasite of Lepidoptera in Poland, 438.
- Lygaeonematus* (see *Pristiphora*).
- Lygaeonematus pini* (see *Pristiphora abietina*).
- Lygaeonematus stecki* (see *Pristiphora pallida*).
- Lygaeus equestris*, on *Taraxacum kok-saghyz* in Kazakstan, 45.
- Lygaeus kalmii*, measures against, in California, 649.
- Lygidea mendax* (on apple), in New York, 533 ; measures against, in Nova Scotia, 662.
- Lygocerus testaceimanus*, parasite of *Leucopis obscura* in Britain, 263.
- Lygus*, measures against, on cotton and lucerne in U.S.A., 246, 417, 463 ; effect of, on cotton, 417.
- Lygus coffeae*, on coffee in Tanganyika, 127.
- Lygus communis*, measures against, on apple in Nova Scotia, 662.
- Lygus elisus*, in U.S.A., 417, 462 ; on cotton, 417 ; bionomics of, on lucerne, 462.
- Lygus hesperus*, in U.S.A., 417, 462 ; on cotton, 417 ; bionomics of, on lucerne, 462.
- Lygus lucorum*, possibly transmitting virus disease in cotton and egg-plant in Japan, 225, 555.
- Lygus pratensis*, in Czechoslovakia, 469 ; in Italy, 472 ; in Poland, 162, 163 ; in Russian Union, 45, 303 ; in U.S.A., 84, 246, 533, 590 ; bionomics of, on apple, 533 ; doubtful relation of, to virus diseases of plants, 84, 163, 303, 472, 590 ; miscellaneous food-plants of, 45, 162, 246, 469.
- Lygus pratensis oblineatus*, on cotton in Arizona, 417.
- Lygus spinolae*, measures against, on vines in Austria, 45.
- Lymantria dispar*, in Czechoslovakia, 463 ; in Germany, 354 ; in Japan, 209, 327, 442, 615 ; in Poland, 163 ; in Russian Union, 313, 314, 404, 405, 406, 456, 627 ; in U.S.A., 138, 139, 170, 180, 645 ; on fruit trees, 163, 468 ; studies on nutrition of, 143, 404, 456 ; effects of temperature on, 313, 314, 404, 405, 406 ; application of bioclimatics to study of, 327 ; natural enemies of, 209, 302, 327, 354, 442, 615 ; utilisation of *Calosoma sycophanta* against, 170 ; other measures against, 138, 139, 645 ; tests of insecticides on, 310, 627.
- Lymantria monacha* (in forests), 223 ; in Czechoslovakia, 469 ; in Germany, 99, 170, 218, 223, 231, 298, 335, 398, 400, 401, 467, 512, 563, 581 ; in Poland, 398 ; physiology of, 99, 298, 398, 399, 564 ; natural enemies of, 170, 218, 335, 581 ; proposed utilisation of *Calosoma sycophanta* against, 170 ; *Barbitistes constrictus* not predacious on, 401 ; infected with polyhedral disease, 582 ; use of scent of females for estimating prevalence of, 400 ; estimation of age and abundance of, from larval excreta, 563 ; insecticides against, 231, 400, 512 ; characters of, 466.
- Lyncestis acontoides*, on *Poinciana* in Jamaica, 181.

M.

- machaeralis*, *Apanteles* ; *Hapalia*.
- Mackiella phoenicis*, gen. et sp. n., on date palm in California, 288.
- Macrocentrus*, scope and synonymy of, 263.
- Macrocentrus abdominalis*, parasite of Tortricids in Transcaucasia, 587.
- Macrocentrus amicropoides*, parasite of *Alsophila pometaria* in Canada, 663.
- Macrocentrus ancyliivorus* (parasite of *Cydia molesta*), introduced into Australia, 544, 640 ;

- attempted utilisation of, against *C. nigricana* in Canada, **39**; other hosts and utilisation of, in U.S.A., **376, 377**; parasitised by *Dibrachys cavus*, **640**.
- Macrocentrus calacte*, sp. n., parasite of *Argyroploce illepidi* in Fiji, **19, 213**.
- Macrocentrus delicatus*, parasite of *Cydia molesta* in U.S.A., **377**.
- Macrocentrus homonae*, sp. n., introduced into Ceylon from Java against *Homona coffearia*, **19**; bionomics of, **20**.
- Macrocentrus instabilis*, parasite of *Cydia molesta* in U.S.A., **377**.
- Macrocentrus thoracicus* (parasite of *Cydia molesta*), attempted utilisation of, against *C. nigricana* in Canada, **39**.
- Macrocentrus trimaculatus*, systematic position of, **263**.
- Macroglenes penetrans*, parasite of wheat gall-midges in Holland, **268**.
- Macropsis munda* (see *Bythoscopus*).
macroscopa, *Brachmia*.
- Macrosiphoniella* (see *Macrosiphum*).
- Macrosiphum aucubae* (see *M. solani*).
- Macrosiphum avenae*, on sugar-cane in Hawaii, **367**; *Leucopis griseola* predacious on, in India, **228**; possible vector of disease of sugar sorghum in Italy, **472**; distribution and food-plants of, **472**.
- Macrosiphum dirhodum*, possible vector of disease of sugar sorghum in Italy, **472**; distribution and food-plants of, **472**.
- Macrosiphum gei*, auct. (see *M. solanifolii*).
- Macrosiphum gossypii turanicum*, on cotton in Transcaucasia, **552**.
- Macrosiphum granarium* (see *M. avenae*).
- Macrosiphum maculata*, sp. n., on lucerne in Central Asia, **552**.
- Macrosiphum moltshanovi*, on peas and vetch in Central Asia, **552**.
- Macrosiphum onobrychis* (on peas and lucerne), in Russia, **305**; in U.S.A., **29-31, 33, 323, 370, 415, 497, 531, 645**; susceptibility of varieties of peas to, **33**; experiments with pea virus in beans and, **370**; physiological conditions producing wing development in, **323**; natural enemies and biological control of, **30, 31, 305**; other measures against, **29, 415, 645**; importance of timing measures against, **415, 531**.
- Macrosiphum pelargonii*, and virus diseases of potato in Russia, **303**.
- Macrosiphum pisi* (see *M. onobrychis*).
- Macrosiphum pseudosolani* (see *M. solani*).
- Macrosiphum ribicola*, food-plants of, in Britain, **333, 671, 672**; transmitting lettuce mosaic, **671**.
- Macrosiphum rosae*, and mosaic disease of narcissus in New York, **652**; on rose in Tasmania, **21**.
- Macrosiphum rubiellum*, on blackberry in Britain, **333**.
- Macrosiphum solani*, in Britain, **563, 671**; in Germany, **157, 267, 634, 686, 688**; in Holland, **578**; in U.S.A., **83, 369, 590, 652**; and virus diseases of potato, **83, 84, 157, 267, 563, 578, 634, 687**; and virus diseases of other plants, **84, 369, 590, 652, 671, 672, 686, 688**; flight habits of, **634**; synonymy of, **590**.
- Macrosiphum solanifolii*, measures against, on *Passiflora edulis* in Australia, **448**; in Britain, **563, 671, 672**; in Germany, **157, 267, 634, 686**; in Holland, **563, 578**; in U.S.A., **83, 369, 370, 563, 652**; bionomics of, **578, 634**; overwintering on rose, **563, 686**; and virus diseases of potato, **83, 84, 157, 267, 563, 578, 634, 686**; and virus diseases of other plants, **84, 369, 370, 448, 652, 671, 686**; digestive system of, **455**.
- Macrosiphum sonchi*, transmitting lettuce mosaic in Britain, **671, 672**.
- Macrosiphum taraxaci*, on *Taraxacum kok-saghyz* and dandelion in Kazakhstan, **44**.
- Macrosteles divisus*, measures against, transmitting lettuce yellows in New Jersey, **536**.
- Macrosteles sexnotata*, possible vector of virus diseases of potato in Russia, **303**.
- Macrotermes gilvus*, feeding on injured roots of tung nut trees in Java, **523**.
- macula-alba*, *Ceuthorrhynchus*.
maculata, *Macrosiphum* (*Macrosiphoniella*); *Nephrotoma* (*Pales*).
maculator, *Pimpla*.
maculatum, *Piesma*.
maculatus, *Bruchus*; *Camponotus*.

maculipennis, *Plutella*.

Madagascar, Aleurodids and virus diseases in, **153, 637**; Hispid on rice in, **664**; locusts in, **14, 62, 478, 543, 571**; Tachinid introduced into Mauritius from, **611**.

Madeira, Coccids of, **392**.

madens, *Tribolium*.

Madras, miscellaneous pests in, **129, 561**; beneficial insects and biological control in, **562, 693**.

Magiicada septendecim, application of bioclimatics to study of, **327**.

Magnesium Arsenate, uses of, as an insecticide, **82, 425**.

Magnesium Carbonate, action of dusts of, on *Bruchus obtectus*, **531**; tests of, in baits for grasshoppers, **134**.

Magnesium Fluoride, tests of, in baits for grasshoppers, **134**.

Magnesium Oxide, as a corrective for foliage injury by fluorine insecticide and Bordeaux mixture, **425**.

Magnesium Sulphate, spraying tests with, against *Heliothis armigera*, **133**; doubtful value of, in sprays against *Leptinotarsa decemlineata*, **133, 158, 634**; ineffective against other insects, **133, 368, 425, 431**.

magnicornis, *Dirhicnus*.

magus, *Tremex*.

Mahé, establishment of *Exochomus flavipes* in, **335**.

Mahogany, pests of, in India, **612**; timber of, practically immune from termites in Porto Rico, **465**.

maidis, *Aphis* (*Rhopalosiphum*).

Maine, sawflies on birch and spruce in, **275, 540**; *Liposcelis divinatorius* in, **650**; beneficial insects in, **540**.

Maize, *Heliothis armigera* on, in S. Africa, **488**; pests of, in Australia, **88, 389, 603**; pests of, in Canada, **25-27, 295, 601**; locusts damaging, in China, **451**; *Aphis maidis* on, in Fiji, **641**; pests of, in Italy, **174, 198, 295**; pests of, in Kenya, **666**; locust damaging, in Madagascar, **62**; *Pyrausta nubilalis* on, in Manchuria, **340**; pests of, in Philippines, **451, 452**; pests of, in Porto Rico, **328, 501, 503**; pests of, in S. Rhodesia, **124, 491, 492**; *P. nubilalis* on, in Russian Union, **109, 148, 152, 229, 587**; pests of, in U.S.A., **32, 133, 138, 178, 179, 180, 248, 284, 295, 340,**

341, 376, 379, 392, 414, 430, 431, 456, 500, 533, 595, 600, 645; insects associated with, in Ohio, **280, 455**; methods of protecting ears of, against pests, **328**; varieties and time of planting of, in relation to pests, **178, 341, 533**; virus diseases in, **88, 472**; little affected by soil treatment with calcium arsenate, **380**.

Maize (Stored), pests of, and their control, **24, 119, 667**; (cobs), in baits, **67, 260**; (meal or flour), in baits, **124, 125, 127, 287, 379, 595**; reducing toxicity of cryolite dust to *Heliothis armigera*, **525**.

Maize Aphid (see *Sipha maydis*).

major, *Penthaleus*; *Polistes*.

malabaricus, *Phassus*.

Malacosoma americana, mating and oviposition of, **456**.

Malacosoma dissia, in U.S.A., **377, 597, 646**; on *Acer saccharum*, **377**; parasites of, **597, 646**.

Malacosoma fragilis, bionomics of, on aspen in Colorado, **528**.

Malacosoma indica, on fruit trees in India, **577**.

Malacosoma neustria, in Czechoslovakia, **145, 468, 469**; in Holland, **205, 269**; in orchards in Poland, **163**; on forest and shade trees, **269, 468, 469**; parasites of, **145, 205**; measures against, **269**.

Malaya, pests of *Derris* in, **539**; locusts in, **486**; summaries of plant quarantines in, **274, 592**; Carabid sent to Samoa from, against *Oryctes rhinoceros*, **641**.

malefida, *Feltia* (*Agrotis*).

Maleuterpes spinipes (*phytolymus*), on *Citrus* in Australia and New Zealand, **21**.

mali, *Aphelinus*; *Contarinia*; *Leptothrips*; *Psylla* (*Psyllia*).

malinellus, *Hyponomeuta padellus*.

Manchuria, miscellaneous pests in, **19, 340, 361**; *Aphomia gularis* imported into Germany from, **520**.

Mandarin Orange (see Orange, Mandarin).

Mangel, pests of, in Britain, **332**; restrictions on importation of, into Britain, **356**; *Piesma quadratum* and crinkle disease of, in Poland, **163, 351, 352**.

mangifera, *Symitha*.

mangiferae, *Cryptorrhynchus* (*Sternochetus*).

- Mango, Coccid on, in Egypt, **509** ; *Anomala expansa* on, in Formosa, **363** ; pests of, in Netherlands Indies, **227** ; *Dacus psidii* on, in New Caledonia, **131** ; *Symitha mangifera* on, in Seychelles, **335** ; fruit-piercing moths damaging, in Sierra Leone, **271** ; pests of, in W. Indies, **239, 464**.
mangoensis, *Zizera* (*Zizina*) *labradus*.
Mangrove (see *Rhizophora*).
manicatus, *Chirothrips*.
Manihot dulcis var. *aipi*, new mite on, in Brazil, **290**.
Manihot tweediana, Coccid on, in Argentina, **23**.
Manihot utilisima (see Cassava).
manihotis, *Bemisia* ; *Dasynus*.
Manila Hemp (see *Musa textilis*).
manilae, *Ceraphron* (*Calliceras*).
manilensis, *Locusta migratoria*.
Mantis, predacious on *Monema flavescens* in Japan, **207**.
Maple, new Coccid on, in Caucasus, **680** ; *Alsophila pometaria* on, in Canada, **663** ; *Cantharis obscura* on, in France, **623** ; pests of, in U.S.A., **74, 374**.
Maple, Broad-leaf (see *Acer macrophyllum*).
Maple, Sugar (see *Acer saccharum*).
Marasmia trapezalis, on maize in S. Rhodesia, **124**.
margalaestriata, *Setomorpha* (see *S. rutella*).
Margarodes, new species of, in Brazil, **623**.
Margarodes buxtoni crithmi, subsp. n., bionomics of, on *Crithmum maritimum* in France, **235**.
Margaronia indica, on cucurbits in Fiji, **641**.
Margaronia pyloalis, liberation of *Cedria paradoxa* against, on mulberry in India, **612**.
marginata, *Petrusina* (*Ormenis*).
marginatorius, *Exenterus*.
marginella, *Campsomermis*.
mariana, *Eulia*.
maritimus, *Pseudococcus*.
Marlattia laricis, on larch in Quebec, **464**.
marmorata, *Parastasia*.
maroccanus, *Dociostaurus*.
marshalli, *Chalcodermis*.
Maruca testulalis (on beans), in Fiji, **641** ; in Mauritius, **611** ; in Porto Rico, **435**.
Maryland, miscellaneous pests in, **377, 599, 600** ; mushroom pests in, **79, 380** ; *Macrosiphum onobrychis* on peas in, **497** ; *Popillia japonica* and its biological control in, **377, 533**.
Massachusetts, *Calomycterus setarius* in, **600** ; hibernation of *Heliothis armigera* in, **430, 431** ; *Hylastes rufipes* in, **418** ; *Psila rosae* on carrot in, **496** ; *Tetranychus telarius* disseminating carnation rust in, **79**.
Mastotermes darwiniensis, in Australia, **545**.
Matsucoccus, on pines in U.S.A. and Dominican Republic, **378, 392** ; new species of, **392**.
matsushitai, *Hylecoetus*.
maura, *Eurygaster*.
mauritanicus, *Tenebroides*.
mauritia, *Spodoptera*.
Mauritius, miscellaneous pests and biological control in, **611, 670**.
maxwelli, *Oxypleurites*.
maydis, *Sipha*.
Mayetiola destructor, in Morocco, **691** ; in New Zealand, **547, 548** ; in Russian Union, **145, 680** ; in U.S.A., **83, 327, 375, 378, 381** ; date of sowing and varieties of wheat in relation to, **83, 327, 375, 378** ; on other cereals, **691** ; bionomics of, **145, 547, 691** ; parasites and biological control of, **145, 375, 381**.
mayri, *Sphaerakis* (*Bruchobius*).
Meat, in baits for Carabid on strawberry, **466**.
Mecistomela corallina, on *Cocos coronata* in Brazil, **661**.
medicaginis, *Aphis* ; *Contarinia*.
Medicago sativa (see Lucerne).
medinalis, *Cnaphalocrocis*.
Mediterranean Fruit-fly (see *Ceratitis capitata*).
Medlar, *Cydia molesta* on, in Argentina, **601**.
megacephalus, *Microphanurus* (see *M. basalis*).
megalopygus, *Dysdercus* (see *D. cingulatus*).
Megaselia, on tung nut trees in Java, **523**.
Megastigmus, species of, bred from galls in Australia, **565** ; study of, infesting conifer seeds in Germany, **230** ; subgenera of, **565**.
Megastigmus abietis, in spruce seeds in Germany, **230**.
Megastigmus ballestrerii, bionomics of, on pistachio in Greece and Sicily, **452, 453**.

- Megastigmus brevivalvus*, bionomics of, in New South Wales, 564–566.
- Megastigmus nonvitta*, bionomics of, in New South Wales, 565.
- Megastigmus spermotrophus*, introduced into Germany in seeds of Douglas fir, 230.
- Megastigmus trisulcus*, bionomics of, in New South Wales, 565.
- Megymenum gracilicorne*, bionomics of, in Japan, 441.
- Meigenia mutabilis*, possible parasite of *Leptinotarsa decemlineata* in France, 194; parasite of *Crioceris asparagi* in Italy, 472; bionomics of, 194.
- melanictera*, *Enaria*.
- melanis*, *Pipunculus confraternus*.
- melanocephalum*, *Tapinoma*.
- Melanophila fulvoguttata*, on *Tsuga canadensis* in U.S.A., 378.
- Melanoplus* (in U.S.A.), relations of outbreaks of, to rainfall and temperature, 469; experiments on flight of, 33, 646; natural enemies of, 75; baits for, 134, 537; plants damaged by species of, 178.
- Melanoplus bivittatus*, in U.S.A., 537, 569.
- Melanoplus differentialis*, in U.S.A., 33, 75, 178, 537, 569.
- Melanoplus femur-rubrum*, in U.S.A., 75, 178, 537, 569.
- Melanoplus mexicanus* (*spretus*), in Canada, 476, 485; in U.S.A., 33, 134, 178, 485, 569, 599, 646, 655; migrations and phases of, 476, 569; effect of tillage on, 655; organisation of measures against, 476.
- melanorhodon*, *Anacridium moestum*.
- Melanostoma*, attacking *Aeolarchis sphenotoma* in Fiji, 213.
- Melanotus communis*, on sugar-cane in Florida, 656.
- Melanotus tamsuyensis*, bionomics of, in Formosa, 363.
- Melanoxanthus fractus*, on tung oil trees in Java, 523.
- melanura*, *Idgia*.
- Melaphis chinensis*, bionomics of, producing tannin galls in Formosa, 205.
- Melasoma tremulae*, on aspen in U.S.A., 599; penetration of fluids into tracheae of, 579, 580.
- Melia azadirachta*, mite on, in India, 128.
- Meligethes aeneus* (on crucifers), in Britain, 333; mobile traps for, in Germany, 511.
- Meliphora grisella* (see *Achroia*).
- Melittia satyriniformis* (Squash Vine Borer), measures against, in Wisconsin, 33.
- Melittobia indicum* (see *Syntomosphyrum*).
- melliferum*, *Hyadaphis* (*Rhopalosiphum*) (see *H. sii*).
- mellitor*, *Microbracon*.
- mellonella*, *Galleria*.
- Melolontha*, in Czechoslovakia, 469, 471; in Germany, 171, 299, 300, 334, 398, 495, 496, 606; in Italy, 200; effect of temperature and humidity on, 300, 471; oviposition sites of, 299, 608, 676; natural enemies and diseases of, 100, 117, 300, 306, 307, 334, 398, 496, 518, 608; organised collection of adults of, 9, 171, 299, 606, 608; insecticides against adults of, 171, 299, 495, 606, 608; reactions of sexes of, to poisons, 406; other measures against, 299, 608; biological bases of measures against larvae of, 606–608; tests of calcium cyanamide against, 200; effect of flooding on, 457; action of HCN on, 309.
- Melolontha hippocastani*, distribution of, in Finland, 267; in Germany, 171, 299, 300, 606, 607, 608; in Poland, 676; in Ukraine, 406; life-cycle of, 9, 171; other bionomics and physiology of, 406, 607, 608; larva of, 224, 694.
- Melolontha melolontha* (*vulgaris*), parasite of, in Denmark, 117, 518; in Germany, 112, 171, 300, 457, 607, 608; in Holland, 269; in Poland, 9, 676; in Russia, 306; bionomics of, 112, 171, 607, 608; fungi infesting 306, 307.
- Melon, Trypetids on, in Hawaii and Baluchistan, 344, 577; *Diaphania hyalinata* on, in Porto Rico, 501; pests of, in U.S.A., 340, 500.
- Melon Fruit-fly (see *Dacus cucurbitae*).
- melvillei*, *Tropidophryne*.
- melzeri*, *Gryllica*.
- Membracis foliata* (*lunata*), on Anonaceae in Brazil, 567.
- membranaceus*, *Brachytrypes*.
- Membranes, method for investigating permeability of, 263.
- mendax*, *Lygidea*.

- mendesi*, *Dysdercus*; *Hyalomyia* (*Phoranthella*).
- mendicus*, *Cleonus* (*Conorrhynchus*).
- menippus*, *Rhaconotus*.
- Meniha* (see *Mint*).
- Mercurous Chloride, uses of, against Diptera infesting vegetables, **116**, **497**, **674**, **675**; applied to strawberry roots against *Lachnosterna*, **425**; tests of, in baits for grasshoppers, **134**; against termites, **181**.
- Mercury Bichloride, uses of, against Diptera infesting vegetables, **116**, **317**, **497**; repellent to grasshoppers, **134**.
- Merhynchites*, subgenus of *Rhynchites* (q.v.), **595**.
- meridionalis*, *Pyrausta aurata*.
- Merisus destructor*, emergence holes of, indicating infestation of wheat by *Mayetiola destructor* in Kansas, **375**.
- meritana*, *Epinotia*.
- Mermis*, in *Dysdercus* in Sudan, **574**; in grasshoppers in U.S.A., **76**.
- Mermis subnigrescens*, **76**.
- Merodon equestris* (Narcissus Fly), bionomics of, in Holland, **494**.
- Meromyza saltatrix*, and white ear in cereals in Russian Union, **680**.
- Meroprion anonicola*, sp. n., measures against, on *Anona squamosa*, etc., in Brazil, **567**.
- Mescinia peruella*, irrigation against, on cotton in Peru, **385**.
- Mesochorus*, parasite of *Vanessa cardui* in Transcaucasia, **587**; hyperparasite of *Diprion similis* in Poland, **671**.
- Mesochorus petiolaris*, possibly hyperparasitic on spruce sawflies in Czechoslovakia, **518**.
- Mesolecanium deltae*, measures against, on orange in Argentina, **238**.
- Mesoleius tenthredinis*, parasite of *Pristiphora erichsoni* in Quebec, **464**.
- messoria*, *Euxoa*.
- Metagonistylum minense* (parasite of *Diatraea*), in Brazil, **505**; utilisation of, in Br. Guiana, **505**, **524**; distribution and utilisation of, in W. Indies, **24**, **182**, **183**, **505**, **659**; bionomics of, **182**, **505**.
- Metal Shields, against termites, **181**, **465**, **694**.
- metallescens*, *Eutetrappa* (*Saperda*).
- Metamasius sericeus*, on sugar-cane in Jamaica, **238**.
- Metarrhizium anisopliae* (infesting noxious insects), in Hawaii, **368**; in Russia, **306**, **684**; in Sweden, **118**; experiments on utilisation of, **118**, **306**, **684**; penetration of chitin of insects by, **307**.
- Meteorological Conditions (see Humidity, Rainfall and Temperature).
- Meteorus*, hosts of, in Holland, **205**; parasite of *Setora nitens* in Java, **347**.
- Meteorus japonicus* (*nipponensis*), parasite of *Lymantria dispar* in Japan, **615**; failure to establish, in U.S.A., **615**; characters and synonymy of, **614**.
- Meteorus pulchricornis*, parasite of *Lymantria dispar* in Europe, **615**; parasite of Pyralid in Morocco, **193**; character distinguishing *M. japonicus* and, **615**.
- Meteorus versicolor*, bionomics of, in Germany, **354**; establishment of, against *Stilpnotia salicis* in Washington, **499**.
- Meth-allyl-chloride, temperature not affecting toxicity of, **111**.
- Methyl Bromide, tests and uses of, as a fumigant, **359**, **539**, **541**, **605**; resistance of strains of *Aonidiella aurantii* to, **343**; effects of, on apples and azaleas, **541**, **542**, **605**; regulations dealing with fumigation with, against *Popillia* and *Naupactus* in U.S.A., **274**, **591**.
- Methyl Salicylate, in repellent paint against pests of books, **366**.
- Methylated Spirit, in spray against Tingid, **359**, **570**; in repellent paint against pests of books, **366**; tests of penetration of, into tracheae of insects, **579**, **580**.
- meticulosa*, *Brotolomia*.
- metricus*, *Polistes*.
- Metriona bicolor*, on bindweed in Kansas, **375**.
- Metriona bivittata*, on bindweed in Kansas, **375**.
- Metriona flavolineata*, measures against, on sweet potato in Jamaica, **239**.
- Metroxylon*, *Promecotheca reichei* on, in Fiji, **366**.
- Metzneria*, bionomics of, on *Pyrus sinensis* in China, **669**.
- Mexican Bean Beetle (see *Epilachna varivestis*).
- mexicana*, *Paratrioza*.
- mexicanus*, *Melanoplus*.

- Mexico, miscellaneous insects in, 143, 285, 569.
- Mezium americanum*, infesting house insulation in U.S.A., 640.
- micacea*, *Hydroecia*.
- micans*, *Stenomalus*.
- Mice, destroying noxious insects, 105, 217.
- Michigan, *Cirphis unipuncta* in, 599; forest pests in, 28, 378, 461; *Pyrausta nubilalis* in, 414.
- Microbracon*, parasite of *Pissodes notatus* in Finland, 8.
- Microbracon abscissor*, parasite of *Cydia glycinivorella* in Japan, 624.
- Microbracon brevicornis*, ants hindering control of *Heliothis armigera* by, in S. Africa, 323.
- Microbracon brevicornis*, auct. (see *M. hebetor*).
- Microbracon chinensis*, establishment of, against *Chilo simplex* in Hawaii, 367.
- Microbracon greeni*, parasite of lac predators in India, 128, 129, 575; rearing and other hosts of, 128, 129; *M. lefroyi* considered a race of, 575.
- Microbracon hebetor*, in Fiji, 213; in Germany, 400, 520, 521; liberation of, against lac predators in India, 129; in Korea, 225; parasitising *Ephesia* and *Plodia*, 213, 225, 400, 521; other hosts of, 129, 520.
- Microbracon lefroyi*, parasite of cotton bollworms in India, 575; considered a race of *M. greeni*, 575.
- Microbracon mellitor*, probably parasitic on *Chalcodermus aeneus* in U.S.A., 77.
- Microbracon nigrorufum*, introduced into U.S.A. from Korea against *Platyedra gossypiella*, 381.
- Microbracon pectinophorae*, introduced into U.S.A. from Korea against *Platyedra gossypiella*, 381.
- Microbracon piger*, introduced into U.S.A. against *Etiella zinckenella*, 381.
- Microbracon pygmaeus*, parasite of *Coleophora pruniella* in Oregon, 643.
- Microbracon triangularis*, parasite of *Aegeria typhiaeformis* in Italy, 630.
- Microcerotermes*, in Australia, 545.
- Microcerotermes arboreus*, measures against, damaging furniture and timbers in Trinidad, 55; characters of, 55.
- Microcryptus*, introduced into U.S.A. from Canada against *Diprion polytomum*, 381.
- Microcryptus bazzonius*, parasite of *Diprion similis* in Poland, 671.
- Microcryptus brachypterus* var. *aphyopterus*, parasite of spruce sawflies in Czechoslovakia, 518.
- Microcryptus galactinus*, parasite of spruce sawflies in Czechoslovakia, 518.
- Microcryptus similis*, parasite of spruce sawflies in Czechoslovakia, 518.
- Microcryptus subguttatus*, parasite of *Diprion similis* in Poland, 671.
- Microdus diversus*, introduced into Australia against *Cydia molesta*, 544.
- Microdus nigrotrochantericus*, in sugar-cane fields in Florida, 659.
- Microdus sanctus*, possible parasite of *Diatraea* in Florida, 659.
- Microdus stigmaterus* (parasite of *Diatraea saccharalis*), utilisation of, in Florida, 656, 659; question of establishment of, in Porto Rico, 502.
- Microdus texanus*, parasite of Lepidoptera in sugar-cane fields in Florida, 657, 659.
- Microgaster globata*, parasite of Tortricids in Transcaucasia, 587.
- Microgaster psarae*, parasite of *Pyncarmon cribrata* in Madras, 129.
- Microgaster subcompleta*, parasite of *Vanessa cardui* in Transcaucasia, 587.
- Micromalthus debilis*, bionomics of, in timber in gold mines in S. Africa, 60; morphology of, 61.
- Micromyzus oliveri*, food-plants and control of, in greenhouses in Washington, 541.
- Microphanurus*, keys to species of, 19, 632.
- Microphanurus anitus*, sp. n., parasite of *Aelia acuminata* in Germany, 632.
- Microphanurus basalis*, utilisation of, against *Nezara viridula* in Australia, 292, 603.
- Microphanurus choaspes*, sp. n., parasite of *Aelia acuminata* in Germany, 632.
- Microphanurus cultratus*, parasite of *Carpocoris pudicus* in Germany, 632.
- Microphanurus megacephalus* (see *M. basalis*).
- Microphanurus priapus*, sp. n., hosts of, in Java, 19.

- Microphanurus semistriatus*, parasite of Pentatomids in Germany and Britain, **64, 632**.
- Microphanurus seychellensis*, parasite of *Cantheconidea robusta* in Ceylon, **19**.
- Microphanurus sulmo*, sp. n., parasite of *Cantheconidea robusta* in Ceylon, **19**.
- Microphanurus vindicius*, sp. n., parasite of *Dasynus manihotis* in Java, **19**.
- Microplectron fuscipenne* (parasite of *Diprion* spp.), utilisation of, in Canada, **276, 369**; in Poland, **671**; introduced into U.S.A., **381**.
- Microplitis ceruræ*, parasite of *Arctornis chrysorrhoea* in Japan, **338**.
- microptera*, *Pararcyptera* (*Arcyptera*); *Romalea*.
- Microtermes*, on injured tung oil trees in Java, **523**.
- Microterys*, key to African species of, **503**.
- Microterys bizanensis*, sp. n., parasite of *Saissetia cuneiformis* in Eritrea, **503**.
- Microterys nicholsoni*, sp. n., parasite of Coccids in Natal, **503**.
- Microterys umbrinus*, sp. n., parasite of *Ceroplastes* in Kenya, **503**.
- Mictis profana*, food-plants of, in Fiji, **641**.
- middletonii*, *Aphis*.
- migratoria*, *Locusta* (*Pachytylus*).
- migratorioides*, *Locusta migratoria*.
- mikado*, *Miramella* (*Podisma*).
- miliaris*, *Asterolecanium*.
- Milionia basalis*, on *Pinus mercusi* in Netherlands Indies, **578**.
- Milk (Dried), in sprays, **52**.
- Milky Disease (in *Popillia japonica*), methods of dissemination of, in U.S.A., **377**.
- Millepedes, attacking tomatoes in greenhouses in Britain, **333**; characters of economic species of, **3**.
- Millet, Italian (see *Setaria italica*).
- Millettia*, cultivation of, for insecticides in Belgian Congo, **294**.
- Millettia reticulata*, insecticide prepared from, **450**.
- Mimastra cyanura*, on fruit trees in India, **503**.
- mimulus*, *Dysdercus*.
- mimus*, *Dysdercus*.
- minense*, *Metagonistylum*.
- Minnesota, forest pests and their parasites in, **434, 597, 599, 646**; *Cirphis unipuncta* in, **599**.
- minor*, *Dryocoetes*.
- Mint, Jassid on, in greenhouses in Britain, **115**; Pyralid on, in Morocco, **193**.
- minuta*, *Hoplocampa*.
- minutana*, *Enarmonia* (*Gypsonoma*).
- minutus*, *Trichogramma*.
- minutus*, *Arrhenodes* (*Patysystrophus*); *Dinoderus*; *Laemophloeus*.
- Miramella mikado*, in Japan, **618**.
- Mirax*, parasite of *Leucoptera coffeella* in Guadeloupe, **435**; introduced into Porto Rico, **435**.
- Miscanthus*, sugar-cane pests on, in Formosa, **363**.
- Mischocyttarus phthisicus*, predacious on *Laphygma frugiperda* in Porto Rico, **503**.
- misella*, *Paroxyna*; *Tinea* (see *T. insectella*).
- Mississippi, *Chalcodermus aeneus* in, **644**; cotton pests in, **243, 599**; Mymarid parasite of *Psallus seriatus* on *Croton* in, **538**; *Cylas formicarius* in, **379**; legislation against *Naupactus* spp. in, **275**.
- Missouri, grasshopper outbreaks in, **569**; miscellaneous pests in, **133, 597, 599**.
- missuriensis*, *Crematogaster victima*.
- Mites, studies on, infesting stored grain, etc., in Russian Union, **312, 318, 319, 551, 585, 686**; list of, on plants in Sweden, **355**; disseminating carnation rust fungus, **79**; attacking insects, **75, 86, 131, 169, 292, 400, 496, 672**; attacking other mites, **319**; natural enemies of, **410, 429, 603, 626**; classification and new species of, **33, 34, 224, 288, 290, 301, 636, 672**.
- mitsukurii*, *Telenomus*.
- Mnium*, *Melaphis chinensis* migrating to, in Formosa, **205**.
- modesta*, *Campsomeris marginella*.
- moestum*, *Anacridium*.
- Molasses (Treacle), in baits, **67, 68, 89, 98, 130, 240, 270, 287, 291, 293, 476, 478, 495, 510, 537, 602, 682**; in bait-sprays, **232, 330**; in sprays against thrips, **177, 425, 525**; as an adhesive for lead arsenate, **661**; attracting females of *Cydia glycini-vorella*, **19**; effect of, on fecundity of *Agrotis segetum*, **682**.
- Moles, destroying *Protoparce* spp. in U.S.A., **251, 253**.
- molesta*, *Cydia* (*Grapholitha*, *Laspeyresia*).

- molestae*, *Angitia* (*Diocetes*).
molitor, *Tenebrio*.
moltshanovi, *Macrosiphum* (*Acyrtosiphon*).
mombinpraeoptans, *Anastrepha fraterculus*.
monacha, *Apate*; *Lymantria* (*Liparis*, *Psilura*).
Monalonion, identity, bionomics and control of species of, on cacao, etc., in Brazil, 566.
Monalonion bahiense, 566.
Monalonion bondari, 566.
Monalonion flavisignatum, sp. n., 566.
Monalonion knighti, sp. n., 566.
Monalonion xanthophilum, 566.
Monema flavescens, bionomics and control of, in Japan, 207.
monemae, *Eurytoma*.
Monima cruda (*pulverulenta*), feeding habits and parasites of, in Poland, 438.
Monoblastus, parasite of *Pikonema alaskensis* in Maine, 540.
monoceros, *Oryctes*.
Monochloronaphthalene, 1. (See Naphthalenes, Chlorinated.)
monodactylus, *Oidaematophorus*.
Monodontomerus, parasite of *Nygmia phaeorrhoea* in Holland, 205.
Monodontomerus dentipes, hosts of, in Japan, 211; parasite of *Diprion similis* in Poland, 671.
Monolepta divisa, on vines in Queensland, 365.
Monolepta nigrobilineata (on soy beans), bionomics of, in Japan, 361; in Manchuria, 340.
Monolepta rosea, on vines in Queensland, 365.
Monolepta varicornis, on maize in Philippines, 452.
Monomorium pharaonis, in houses in Formosa, 446.
Monosteira unicastata, bionomics and control of, in Morocco, 359, 570.
monostigma, *Scirpophaga*.
Monotoma parallela, in stored cereals in Kansas, 600.
Montana, *Melanoplus mexicanus* in, 646.
montanus, *Pachynematus* (*Nematus*).
montei, *Eurydinoteloides*.
Monterey Cypress (see *Cupressus macrocarpa*).
montrouzierei, *Cryptolaemus*.
Moodna ostrinella, fumigation of cottonseed against, in Peru, 165.
mori, *Bombyx*; *Diplosis*; *Trionymus*.
morio, *Syagrus*; *Teleonemia*.
Mormon Cricket (see *Anabrus simplex*).
Mormoniella vitripennis, bionomics of, in Japan, 443.
Moroccan Locust (see *Doclostaurus maroccanus*).
Morocco, beet pests in, 283; cereal pests in, 124, 691; Pyralid on mint in, 193; miscellaneous pests in, 58, 604, 691; orchard pests in, 283, 359, 570; Lepidoptera on poplars and willows in, 196; new mite on tomato in, 636; new Coccid in, 392; *Schistocerca gregaria* in, 477; beneficial insects in, 58, 193, 194, 196, 283, 284, 604; summary of plant quarantines in, 274.
morosa, *Lachnosterna* (*Holotrichia*).
morstatti, *Xyleborus*.
Mosaic (see Virus Diseases).
mosellana, *Sitodiplosis* (*Thecodiplosis*).
Mosquito Larvae, tests of insecticides on, 134, 135, 142, 241, 524.
Moth-proofing Preparations, tests of, 140.
moultoni, *Frankliniella*.
Mucor, pathogenic to locusts in S. Africa, 92; infesting chestnuts in France, 358.
Mugho Pine (see *Pinus mugo*).
Mugwort (see *Artemisia vulgaris*).
Mulberry, *Aulacaspis pentagona* on, in Brazil, 86; pests of, in Japan, 103, 555; *Diplosis mori* on, in Korea, 337; *Margaronia pyloalis* on, in India, 612; experimental preference of *Diacrisia obliqua* for, 130.
Mulberry Gall-midge (see *Diplosis mori*).
multistriatus, *Scolytus*.
Mundulea, survey of data on, as an insecticide, 104.
mundus, *Bythoscopus* (*Macropsis*).
mungomeryi, *Eutachina*.
Murgantia histrionica, measures against, on crucifers in Virginia, 530; alimentary system of, 280.
murinana, *Tortrix* (*Cacoecia*).
murinus, *Lacon* (*Brachylacon*).
Muraya, *Pulvinaria polygonata* on, in Formosa, 557.
Musa textilis (in Philippines), *Pentalonia nigronervosa* transmitting bunchy-top of, 365, 667; indicating areas favourable to *Locusta migratoria manilensis*, 485.

Musca, *Dirhinus* reared on, 212, 502.
Musca domestica, parasitised by *Mormoniella vitripennis* in Japan, 443.
Musca domestica vicina, parasitised by *Spalangia cameroni* in Fiji, 366.
 Muscardine Fungus, White (see *Beauveria bassiana*).
muscarum, *Stenomalus*.
Muscideopsis lecanii, sp. n., parasite of *Lecanium persicae* in W. Australia, 294.
musculosa, *Oria*.
musculus, *Lacon*.
muscorum, *Anthrenus*.
 Mushrooms, characters and identity of mites on, in Britain, 1; pests of, in U.S.A., 79, 380; fumigation against pests of, 260.
musicus, *Gastrimargus*.
 Mussel Scale (see *Lepidosaphes ulmi*).
 Mustard, pests of, in Louisiana, 250, 373.
mutabilis, *Meigenia*; *Ootheca*.
Myelois ceratoniae, measures against, in dates in Egypt, 506.
Myelophilus piniperda, spring activity of, in Sweden, 123; frass and debris in galleries of, 391; forest management maintaining natural enemies of, 437.
myersi, *Eptitrimerus*.
Myiopardalis pardalina, on melon in Baluchistan, 577; intercepted in cucurbits in Russian Union, 439.
Myiophasia globosa, parasite of *Chalcodermus aeneus* in U.S.A., 77, 82.
Mylabris dicincta, probably destroying eggs of *Nomadacris septemfasciata* in Tanganyika, 387.
Myllocerus, on tung oil trees in Java, 523.
Myristica fragrans (see Nutmeg).
myristicae, *Xyleborus*.
Myrmelachista ambigua ramulorum, baits for, in Porto Rico, 435.
myron, *Ampeloeca*.
 Mysore, miscellaneous pests in, 291, 625; beneficial insects in, 291.
mytilaspidis, *Aphytis* (*Aphelinus*).
Mytilaspis (see *Lepidosaphes*).
Mytilococcus (see *Lepidosaphes*).
Myzella, considered distinct from *Capitophorus*, 99, 100.
Myzocallis ononidis, on cotton in Russia, 215.
Myzocallis ulmicola, on elms in Japan, 443.

Myzodes (see *Myzus*).

Myzus cerasi (on cherry), in Australia, 20, 279; in Britain, 333; in New York, 535; measures against, 20, 279, 535.

Myzus circumflexus, relation of, to virus diseases of plants in U.S.A., 83, 84, 369, 590.

Myzus convolvuli (see *Macrosiphum solani*).

Myzus hieracii, experiments with lettuce mosaic and, in Britain, 671.

Myzus lactucae (see *Macrosiphum ribicola*).

Myzus ornatus, transmitting virus disease of cucumber in Germany, 688.

Myzus persicae, in S. Africa, 360; in Australia, 20, 448; in Britain, 236, 563, 578, 672; in Czechoslovakia, 468; in France, 622; in Germany, 157, 267, 301, 334, 633, 686, 687; in Holland, 578; in India, 228; in Netherlands Indies, 493; in Japan, 210; in S. Rhodesia, 125, 226; in Russia, 215, 302; in U.S.A., 83, 142, 274, 369, 590; on cotton, 215; on peach and apricot, 20, 157, 236, 267, 468, 578, 633, 687; and potato virus diseases, 83, 157, 236, 267, 301, 302, 334, 563, 578, 633, 686, 687; on tobacco, 125, 210, 360, 633; and virus diseases of tobacco, 125, 226, 302, 493; on other plants, 125, 578, 622, 672, 687; and virus diseases of other plants, 274, 369, 448, 590, 671, 686, 687; characteristics of bean and tomato leaves unfavourable to, 142; flights of, 226, 267, 301, 578, 633, 687; other bionomics of, 267, 578, 622, 687; insects predacious on, 226, 228, 687; measures against, 20, 125, 157, 226, 236, 448, 578, 687.

Myzus polygonyonai, sp. n., on *Polygonum* in Japan, 104.

Myzus pseudosolani (see *Macrosiphum solani*).

N.

Naaki, 120, 582.

Nabis alternatus, predacious on *Macrosiphum onobrychis* in Utah, 30.

- Nabis ferus*, predacious on noxious insects in Utah, **30, 463**.
- Nacoleia octasema*, measures against, on banana in Fiji, **213**.
- nana*, *Trichogrammatoidea*.
- Naphthalene, against carpet beetles and clothes moths, **188, 635, 636**; against mites in beet seed, **686**; uses of, against wireworms, **97, 177, 178, 378**; killing eggs and larvae of *Psila rosae*, **497**; as a repellent, **71, 116, 211, 299, 420, 497, 522, 608**; increasing effect of wool grease emulsions on eggs of *Cydia pomonella*, **426**; plants injured by, **71, 97**; ovicidal properties of derivatives of, **331, 332**.
- Naphthalenes, Chlorinated, tests of, as ovicides, **1, 332**; bands treated with, against *Cydia molesta*, **639**.
- napi*, *Pieris*.
- Narcissus*, pests of, in Britain, **512**; *Merodon equestris* on, in Holland, **494**; pests of, in U.S.A., **652, 654**; Aphids transmitting mosaic disease of, **652**.
- Narcissus* Fly (see *Merodon equestris*).
- nasturtii*, *Contarinia*.
- nasuta*, *Proorops*.
- Nasutitermes* (see *Eutermes*).
- natalensis*, *Tropidophryne*.
- Naupactus*, legislation against, in U.S.A., **275, 591**.
- Naupactus leucoloma*, in U.S.A., **259, 274, 275, 378, 591**; bionomics of, **275, 378**; measures against, **259, 378, 591**.
- navale*, auct., *Tribolium* (see *T. castaneum*).
- Nebraska, Aphids on wheat in, **542**.
- Necrobia ruficollis*, habits and distribution of, **584**.
- Necrobia rufipes*, habits and distribution of, **212, 213, 584**.
- Necrobia violacea*, habits and distribution of, **584**.
- Nectarine, *Tortrix sarcostega* on, in Baluchistan, **51**; *Dicyphus* on, in New South Wales, **449**.
- negligens*, *Acritocera*.
- nematicida*, *Coelopisthia* (*Pteromalus*) (see *Tritoneptis klugi*).
- Nematodes, infesting insects, **38, 39, 76, 92, 100, 165, 214, 338, 347, 348, 364, 500, 519, 574**; method of sampling soil for, **317**.
- Nematospora*, Rhynchota associated with, on plants, **388, 389**.
- Nematospora gossypii*, experiment with, in cotton bolls, **491**.
- Nematus abietinus*, *erichsoni* and *laricis* (see *Pristiphora*).
- Nematus montanus* (see *Pachynematus*).
- Nematus proximus*, characters of, **6**.
- Nematus purpureae*, on *Salix purpurea* in Germany, **6**; characters of, **6**.
- Nematus ribesii*, bionomics of, on currant and gooseberry in Germany, **114**.
- Nemeritis canescens*, parasite of *Ephestia kuehniella* in Germany, **400**; bionomics of, parasitising *Plodia* in Italy, **173**; olfactory conditioning and host selection in, **264, 265**.
- Nemoraea*, parasite of *Laphygma exempta* in Kenya, **666**.
- nemorata*, *Phyllotoma*.
- Nemorilla floralis*, parasite of *Ancylis comptana* in Kansas, **376**; parasite of *Pyrausta aurata* in Morocco, **193**.
- nemorum*, *Phyllotreta*.
- nenuphar*, *Conotrachelus*.
- Neoapectana*, **39**.
- Neoapectana glaseri*, in *Popillia japonica* in U.S.A., **165**.
- Neocerata rhodophaga*, on rose in U.S.A., **600**.
- Neochryopus savagei*, predacious on *Oryctes* in Dahomey, **347**.
- Neodiprion* (see *Diprion*).
- Neodiscodes*, African species of, **503**.
- Neogastrallus librinocens*, new parasite of, in Florida, **461**.
- Neolecanium silveirai*, measures against, on vines in Brazil, **34**.
- Neomaskellia bergi*, not transmitting dwarf disease of sugar-cane in Queensland, **186**.
- neomexicanus*, *Aphis*.
- Neosyrista similis*, bionomics and control of, on rose in Japan, **210, 211**.
- Neowashingtonia* (see *Washingtonia*).
- Nephantis serinopa*, liberation of *Trichospilus pupivora* against, on coconut in Ceylon, **638**.
- Nephopteryx pirivorella* (see *Numonia*).
- Nephotettix bipunctatus cincticeps*, transmitting dwarf disease of rice in Japan, **362**; oviposition of, **362**.
- Nephrotoma maculata*, damaging cereals and pastures in Germany, **519**.

- Nephrotoma virgata*, on tobacco in Japan, 210.
- nesiotes*, *Eurytoma*.
- Nestlera*, relation of *Locustana pardalina* to, in S. Africa, 394.
- Netherlands Indies, coffee pests in, 161, 522; cotton pests in, 280; *Stromatium longicorne* in furniture in, 493; Drepanid on gambier in, 385; miscellaneous pests in, 48, 227, 523; new Scolytids on nutmeg in, 512; pests of *Pinus mercusi* in, 577, 578; Lepidoptera on tea in, 94, 347; tobacco pests in, 17, 493, 637; Tineid in stored tobacco in, 50; locusts in, 478, 486; termites in, 384, 523; insects and virus diseases in, 153, 493, 637; beneficial insects in, 19, 94, 347, 385, 386; beneficial insects introduced into other countries from, 19, 205, 366, 506, 665.
- Neurotoma flaviventris*, bionomics of, in Germany, 114.
- neustria*, *Malacosoma (Clisiocampa)*.
- New Britain (see New Guinea Territory).
- New Brunswick, *Alsophila pometaria* on elm, etc., in, 662-664; *Blissus hirtus* in, 601; utilisation of parasites against *Diprion polytomum* in, 369.
- New Caledonia, *Dacus psidii* in, 131; *Teleonemia* shipped from Fiji to, against *Lantana*, 212.
- New Guinea Territory, cacao pests in, 277, 544; parasites and biological control of coconut pests in, 22, 277, 294, 366, 506.
- New Hampshire, *Cirphis unipuncta* in, 599; *Malacosoma disstria* in, 377.
- New Hebrides, beneficial insects introduced into, 212, 366; failure to introduce *Pleurotropis parvulus* into New Guinea from, 366.
- New Jersey, apple pests in, 536, 642; forest pests in, 74, 77, 279, 600, 651; European Cerambycid in building timber in, 600; *Macrosteles divisus* and lettuce yellows in, 536; *Pyrausta nubilalis* in, 179; *Tiphia popillivora* and its utilisation against *Popillia japonica* in, 84, 377; *Tortilia viatrix* in stored senna in, 29.
- New Mexico, *Cydia pomonella* in, 31, 273; *Dendroctonus convexifrons* in, 599; breeding areas of *Eutettix tenellus* in, 593, 594; *Platyedra gossypiella* in, 381.
- New South Wales, *Cosmopolites sordidus* on banana in, 184, 646; *Eurytoma fellis* on *Citrus* in, 564; forest pests in, 546, 602; orchard pests in, 57, 279, 293, 345, 449, 544, 640; insects and virus disease of *Passiflora edulis* in, 448; vegetable pests in, 58, 449, 545, 639; *Eutane terminalis* in, 329; grasshoppers in, 56, 130; beneficial insects in, 56, 279, 293, 564, 640; *Angitia fenestralis* introduced into, 545; establishment of *Teleonemia* against *Lantana* in, 546; *Syntomosphyrum indicum* introduced into Queensland from, 602.
- New York, forest pests in, 68, 69, 77, 190, 279, 529, 530, 600, 651; Dutch elm disease in, 77; *Hydroecia immanis* on hops in, 593; miscellaneous pests in, 425, 599, 635; orchard pests in, 77, 255, 382, 533, 534, 535; pests of ornamental plants in, 79, 499, 652; vegetable pests in, 53, 274, 531; Aphids and virus diseases in, 273, 274, 652; new mealybugs in, 48.
- New Zealand, cereal pests in, 547, 548; *Citrus* pests in, 21, 56, 277, 278, 523, 524; orchard pests in, 159, 292, 548, 550; pests of pines in, 504; Tineid on raspberry and blackberry in, 37; *Smynturus viridis* in, 550; host range and transmission by thrips of spotted wilt in, 546; American Buprestid in, 329; natural enemies and biological control of insects in, 37, 159, 262, 504, 548, 551; biological control of noxious plants in, 449; summary of plant quarantines in, 274; beneficial insects introduced into Australia from, 545, 546.
- Nezara*, vector of *Nematospora*, 389.
- Nezara chloris* (see *Aethemenes*).
- Nezara viridula*, utilisation of *Microphanurus basalis* against, in Australia, 292, 603; on tobacco in Netherlands Indies, 493.
- Nicandra physaloides*, *Myzus persicae* on, in S. Rhodesia, 125; possible reservoir of tobacco rosette, 125.
- nicevillei*, *Glyptomorpha (Bracon)*.
- nicholsoni*, *Microterys*.
- nicolasi*, *Campylomma*.

- Nicotiana* spp., *Phthorimaea operculella* on, in Brazil, 289; experiments with virus diseases and, 444, 546. (See Tobacco.)
- Nicotine, 593; against Aphids, 29, 157, 226, 236, 257, 332, 333, 353, 371, 395, 428, 448, 458, 645, 674, 687; against *Aspidiotus perniciosus*, 690; against Jassids, 115, 281, 413; against other Rhynchota, 232, 359, 449, 530; against Coleoptera, 156, 383, 623; against Diptera, 297, 353, 514, 519; effect of drenching mushrooms with, against *Sciara*, 380; against Lepidoptera, 103, 516, 663, 689; studies on fixed compounds of (including nicotine-bentonite), against *Cydia* spp., 133, 272, 273, 525, 534, 536, 544, 545, 643, 653; against thrips, 233, 357, 365, 526; tests of ovicidal properties of, 332; action of, on bees, 101, 402; dusting with, 101, 115, 365, 371, 395, 428, 449, 674; as a greenhouse fumigant, 115, 357, 526; applied by vaporisation, 29, 395, 413; formulae containing, 103, 115, 233, 281, 333, 353, 359, 365, 371, 395, 448, 458, 514, 530, 674, 689; and methylated spirit, 359; and oils, 103, 332, 413, 458, 530, 534, 689; and pyrethrum, 449; and soaps, 115, 233, 332, 359, 395, 448, 458, 514, 519, 530; and sodium chlorate, 333; and tar distillates, 689; new activator for, 645; effects of, on carnations and azaleas, 526, 605.
- Nicotine Sulphate, against Aphids, 125, 151, 258, 274, 278, 279, 371, 428, 429, 536, 541, 645, 662; against Coccids, 278, 432; against Jassids, 292, 413, 429, 432, 501; against other Rhynchota, 115, 125, 463, 561, 570, 662, 690; against *Cydia pomonella*, 89, 133, 186, 272, 432, 525, 536, 643, 653; against other Lepidoptera, 33, 126, 179, 376, 529, 535, 662; action of, on eggs of *Chilo simplex*, 18; against Diptera, 58, 380, 555, 556, 628; against mites, 410, 429; against sawflies, 21, 275, 540; against thrips, 56, 71, 72, 127, 177, 365, 410, 425, 498, 525; action of, on bees, 101; dusting with, 21, 179, 371, 463, 470, 561; carriers for, 179, 371; formulae containing, 33, 56, 71, 89, 115, 125, 133, 177, 179, 186, 278, 279, 292, 365, 429, 432, 498, 525, 529, 535, 536, 690; and bentonite, 133, 179, 272, 525, 643, 653; adsorption of, by other siliceous earths, 133; and Bordeaux mixture, 125, 501, 536; and calcium arsenate, 529; addition of chloropicrin to dusts of, against *Ceuthorrhynchus macula-alba*, 470; and lead arsenate, 125, 279, 292, 432, 529, 536; and lime-sulphur, 292, 429, 498, 536; and methylated spirit, 570; and molasses, 127, 425, 525; and oil emulsions, 56, 58, 89, 186, 278, 376, 413, 429, 432, 498, 529, 535, 536, 690; and colloidal sulphur, 186; and soap, 115, 151, 177, 258, 278, 365, 498, 540, 541, 570; other spreading and wetting agents for, 33, 71, 89, 179; activators for, 177, 645; adhesives for, 272, 525, 643, 653; other insecticides compared with, 71, 72, 127, 177, 536, 540.
- nidulans*, *Eupteromalus*.
niger, *Anagyrus*; *Coelinus*; *Lasius*; *Orius* (*Triphleps*).
 Nigeria, Aleurodids transmitting cassava mosaic in, 153; summary of plant quarantines in, 592.
nigeriensis, *Bemisia*.
 Nightshade, Black (see *Solanum nigrum*).
nigra, *Phytomyza*; *Saissetia*.
nigrescens, *Anagyrus*.
nigricana, *Cydia* (*Laspeyresia*).
nigricornis, *Phytomyza* (see *P. affinis*); *Trioxa*.
nigridens, *Phaeogenes*.
nigrifemur, *Perisierola*.
nigripennis, *Cryptogonus orbiculus*.
nigripes, *Lydella* (*Anetia*).
nigrobilineata, *Monolepta* (*Paraluperodes*).
nigrofasciatus, *Dysdercus*.
nigronervosa, *Pentalonia*.
nigrorufum, *Microbracon*.
nigrotrochantericus, *Microdus* (*Bassus*).
nigrum, *Leptomastix*.
Nilaparvata oryzae, oviposition of, on rice in Japan, 362.
nipponensis, *Meteorus* (see *M. japonicus*).
nipponica, *Acantholyda*.
nirecola, *Chromaphis*.
nitens, *Setora*.
nitida, *Revena* (*Amercedoides*).
 Nitrobenzene, in oil emulsions against vine moth pupae, 103.

- nivella*, *Scirpophaga*.
niveus, *Oecanthus*.
nobilis, *Lebeda*; *Rhizophagus*.
noctilio, *Sirex* (*Paururus*).
noctiluca, *Lampyrus*.
noctuae, *Zenillia*.
nodiceps, *Cryptognatha*.
Nomadacris septemfasciata, in Fr. W. Africa, 570, 571; in Portuguese E. Africa, 62, 479, 484; in S. Africa, 91, 92; in Belgian Congo, 476, 482, 483, 486; in Kenya, 666; in Madagascar, 478, 543, 571; in Nyasaland, 62, 126, 388; in N. Rhodesia, 483, 484; in S. Rhodesia, 124, 637; in Tanganyika, 387, 480, 484; in Uganda, 480, 666; breeding centres and ecology of, 62, 387, 388, 479, 480, 483, 484, 570, 571; phases of, 387, 388, 482, 483, 486, 570, 571; migrations of, 126, 387, 388, 476, 479, 484, 666; fungi infesting, 91, 92; other natural enemies of, 92, 387; measures against, 92, 479, 484, 637; international organisation for control of, 483, 484.
nonvitta, *Megastigmus* (*Epibootania*).
Noogoora Burr (see *Xanthium pungens*).
nordmannianae, *Chermes*.
 Norfolk Island, introduction of *Teleonemia* into, against *Lantana*, 546.
Norta altissima, relation of *Eutettix tenellus* and curly-top virus to, in Idaho, 286.
norvegicus, *Calocoris*.
 Norway Spruce (see *Picea abies*).
Nosema, in insects in S. Africa and Brazil, 459; host relations of, 459; study of new species of, in *Cactoblastis* spp., 459.
Nosema cactoblastis, sp. n., 459.
Nosema cactorum, sp. n., 459.
notabilis, *Aesiotes*.
notata, *Chloropisca*.
notatus, *Pissodes*.
Notodacus (see *Dacus*).
 Nova Scotia, apple pests in, 662; *Blissus hirtus* damaging lawns in, 601; *Alsophila pomataria* on elm, etc., in, 662-664.
Novius cardinalis (see *Rodolia*).
 Novosil (containing dinitro-orthocresol q.v.), 400.
noxius, *Brachycolus*.
noyesi, *Eloria*.
nubilalis, *Pyrausta*.
nubilus, *Helophorus*.
nucicolora, *Elaphria*.
nucleorum, *Pachymerus*.
nucum, *Curculio* (*Balaninus*); *Pimpla*.
Numonia piriorella, on *Pyrus sinensis* in China and Korea, 668.
 Nun Moth (see *Lymantria monacha*).
Nurudea shiraii, producing tannin galls on *Rhus* in Formosa, 205.
nüsslini, *Dreyfusia* (see *Chermes nordmannianae*).
 Nutgrass (see *Cyperus rotundus*).
 Nutgrass Armyworm (see *Laphygma exempta*).
 Nutmeg, new Scolytids on, in Sumatra, 512.
 Nyasaland, cotton pests in, 125, 126, 222; miscellaneous pests in, 126; *Nomadacris septemfasciata* in, 62, 126, 388; beneficial insects in, 126.
Nygma phaeorrhoea, on oak and fruit trees in Czechoslovakia, 468, 469; parasites of, in Holland, 205; in Poland, 163; measures against, in U.S.A., 139, 180.
Nymphaea alba, *Galerucella nymphaeae* on, in Italy, 3.
nymphaeae, *Galerucella*.
Nymphula depunctalis (on rice), in Mysore, 291; in Philippines, 364, 451; bionomics of, 364; measures against, 291, 364.
Nymphula vitalis, bionomics and control of, on rice, etc., in Korea, 618, 619.
Nysius, type of injury to wheat by, in New Zealand, 548.
Nysius turneri, bionomics and control of, in Tasmania, 226, 227.
Nysius vinitor, measures against, on vegetables and stone-fruits in New South Wales, 449.

O.

- Oak (*Quercus*), pests of, in Australia, 546; adaptation of pests of, to rhododendrons in Britain, 295; *Alsophila pomataria* on, in Canada, 663; pests of, in Czechoslovakia, 468, 469; chestnut pests on, in France, 358; pests of, in Germany, 204, 299, 354, 522; *Thaumetopoea processionea* on, in Italy, 516; pests of, in Poland, 438; pests of, in Russia, 43, 456; *Dryocoetes minor* on, in Sicily, 522; pests of, in U.S.A., 32, 645; weight of foliage of, in relation to insect control, 143; insects experimentally fed on, 229, 399, 406.

- Oak Silkworm, Chinese (see *Antheraea pernyi*).
- Oak Timber Worm (see *Arrhenodes minutus*).
- Oats, pests of, in Australia, **21, 545** ; pests of, in Britain, **96, 97, 122** ; Tipulids not completing development on, in Germany, **519** ; pests of, in Japan, **208, 556** ; *Calliptamus italicus* damaging, in Poland, **9** ; pests of, in Russian Union, **322, 454, 680** ; *Limothrips cerealium* on, in Sweden, **121** ; pests of, in U.S.A., **284, 599** ; insects and white ear in, **680** ; *Mayetiola destructor* not developing on, **691** ; soil treatment with calcium arsenate affecting yield of, **380**.
- Oats (Stored), pests of, and their control, **64, 119, 318, 319**.
- Oberea linearis*, on hazel in Greece, **452**.
- oberthüri*, *Catocala*.
- oblineatus*, *Lygus pratensis*.
- obliqua*, *Diacrisia*.
- obliquus*, *Listroderes*.
- oblongus*, *Phyllobius*.
- obscura*, *Cantharis* ; *Leucopsis* ; *Rhabdocnemis*.
- obscurata*, *Brachymeria*.
- obscurator*, *Orgilus*.
- obscurella*, *Brachonyx pineti*.
- obscuripennis*, *Rhyparida*.
- obscurus*, *Agriotes* ; *Anaphothrips* ; *Athous* ; *Chrysomphalus*.
- obsoleta*, *Heliothis* (*Chloridea*) (see *H. armigera*).
- obtectus*, *Bruchus* (*Acanthoscelides*).
- ocellana*, *Spilonota* (*Eucosma*).
- ocellatus*, *Paniscus* ; *Pristomerus* ; *Smerinthus*.
- Ochrogaster contraria*, natural enemies of, on *Acacia* in Australia, **545**.
- Ochrosidia immaculata* (see *Cyclocephala*).
- Ochsenheimeria taurella*, causing white ear in cereals and *Bromus* in Russian Union, **680**.
- octasema*, *Nacoleia*.
- octocinctus*, *Stenaraeoides*.
- octomaculata*, *Saperda*.
- oculata*, *Chrysopa*.
- oculiperda*, *Thomasiniana*.
- Odontopus*, vector of *Nematospora*, **389**.
- Odontotermes* (see *Termes*).
- Oecanthus niveus*, feeding habits of, in Utah, **30** ; tests of barium fluosilicate on, **139**.
- Oedaleus australis*, in Australia, **545**.
- Oedipoda*, in Jugoslavia, **480**.
- Oedipoda coerulescens*, in Poland, **9**.
- Oemona hirta*, bionomics of, on *Citrus* in New Zealand, **21**.
- Oenophthira pilleriana* (see *Sparganothis*).
- oestracea*, *Trichopsidea*.
- Ohio, pests of beans in, **82, 421** ; cereal pests in, **82, 414** ; insects associated with maize in, **280, 455** ; *Scolytus multistriatus* and Dutch elm disease in, **378, 599** ; spray programmes for fruit crops in, **104, 623** ; potato pests in, **342, 421** ; *Chelonus annulipes* introduced into Florida from, against *Diatraea saccharalis*, **656**.
- Oiceticus abboti*, on *Citrus* in Jamaica, **181**.
- Oidaematophorus monodactylus*, on bindweed in Kansas, **375**.
- Oil, Camphor Sassafras Base, as intermediary solvent for derris in oil sprays, **530**.
- Oil, Castor, tests of penetration of, into tracheae of insects, **579, 580**.
- Oil, Cedar-wood (see Cedar-wood Oil).
- Oil, Cinnamon (see Cinnamon Oil).
- Oil, Coconut, and derris extract against thrips, **493**.
- Oil, Cottonseed, emulsions of, as carrier for paradichlorobenzene, **526**.
- Oil, Ground-nut, as an insecticide, **168, 530, 593** ; and derris extract against thrips, **493**.
- Oil, Linseed, emulsion of, against *Tetranychus telarius*, **45** ; effect of emulsions of, on pear buds, **94** ; timber treated with, against carpenter bees, **337** ; as adhesive for lead arsenate, **53, 430, 540**.
- Oil, Olive, emulsions of, against Aphids and Coccids, **6** ; in bait for *Dacus oleae*, **98**.
- Oil, Pine-tar, as an insecticide, **593**.
- Oil, Soy-bean, forms of nicotine-bentonite containing, **272, 643, 653**.
- Oil Emulsions, against Aleurodids, **25, 259, 530, 560, 642, 649** ; against Aphids, **20, 236, 237, 429, 450, 458, 460, 467, 517, 529, 534, 535, 536, 550, 662** ; against Coccids, **23, 25, 34, 55, 66, 103, 128, 130, 164, 238, 255, 256, 259, 278, 292, 297, 432, 433, 435, 460, 467, 508, 509, 524, 529, 534, 535, 553, 649, 662, 681, 690** ; against Capsids, **45, 236, 237, 566** ;

- against other Rhynchota, 25, 353, 413, 432, 467, 535, 690 ; against Coleoptera, 426, 450 ; against *Cydia* spp., 20, 57, 89, 166, 186, 192, 293, 432, 534, 536 ; against other Lepidoptera, 28, 33, 103, 236, 237, 376, 450, 529, 535, 689 ; against Diptera, 58, 297, 450, 497 ; against mites, 2, 55, 56, 57, 103, 257, 409, 429, 430, 432, 460, 535, 536, 550, 649 ; against sawflies, 461 ; against thrips, 56, 433, 498 ; destroying beneficial insects, 430, 549, 662 ; types of oils for, 2, 20, 28, 56, 57, 58, 89, 94, 103, 128, 130, 164, 166, 186, 188, 192, 237, 255, 259, 278, 292, 293, 297, 332, 353, 376, 409, 426, 429, 430, 432, 435, 450, 458, 460, 498, 509, 524, 525, 526, 527, 529, 530, 534, 535, 536, 553, 560, 566, 626, 627, 642, 649, 653, 662, 681, 689, 690 ; factors affecting deposits of, 409, 411, 508 ; preparation of types of, 432, 508, 626 ; emulsifiers and spreaders for, other than soap, 70, 278, 332, 411, 529, 626, 627, 642, 681 ; formulae for, 2, 20, 23, 28, 33, 56, 57, 66, 89, 94, 103, 130, 255, 278, 292, 293, 409, 429, 430, 432, 435, 458, 460, 509, 524, 526, 527, 529, 534, 535, 536, 549, 550, 681 ; formulae containing, 28, 56, 57, 89, 103, 192, 236, 259, 278, 293, 409, 429, 432, 450, 458, 460, 461, 497, 498, 509, 529, 530, 534, 535, 536, 553, 690 ; and aniline, 103 ; and Bordeaux mixture, 188, 192, 497, 536 ; and calcium arsenate, 529 ; and carbon bisulphide, 553 ; and derris, 33, 530, 642, 689 ; and dinitro-cresol, 236, 332, 534 ; and dinitro-o-cyclohexyl-phenol, 429, 529, 530, 534, 535, 649 ; and lead arsenate, 28, 139, 166, 188, 190, 192, 293, 376, 426, 430, 432, 461, 525, 529, 536 ; and lime-sulphur, 57, 409, 430, 432, 460, 536 ; and nicotine, 56, 58, 89, 103, 186, 278, 332, 376, 413, 429, 432, 458, 498, 529, 530, 534, 535, 536, 689, 690 ; and nitrobenzene, 103 ; as a carrier for paradichlorobenzene against borers, 526, 527 ; and pyrethrum, 28, 376, 450, 689 ; and sulphur, 57 ; and tar distillates, 236, 534, 535 ; and thiocyanates, 236, 237, 259, 332 ; value of, in combined post-dormant washes, 396 ; effects of, on plants, 45, 94, 103, 255, 430, 435, 458, 460, 508, 509, 529, 536, 653, 680 ; interactions of, with other sprays on *Citrus*, 278, 279 ; effect of sprays of, on removal of spray residues from fruit, 189, 192, 430 ; tar distillates compared with, 429, 467, 468, 509, 529 ; other insecticides compared with, 2, 237, 458.
- Oil Palm (see *Elaeis guineensis*).
- Oils, in baits, 67, 260 ; spraying with, against locusts, 618 ; water in rice fields treated with, against pests, 365, 613, 665 ; micro-technique for testing action of, on Coccids, 143 ; in mixture for treating timber against pests, 181, 337 ; atomised sprays of insecticides in, 154, 155, 412, 413 ; autogiro for applying formulae containing, 74, 75 ; dusts impregnated with, 75, 308 ; as an adhesive for cryolite dips, 380, 652 ; and beta-naphthol, for treating bands against *Cydia* spp., 197 ; in formula for removing spray residues from fruit, 190. (See Kerosene.)
- Oils, Sulphonated (see Ultrawet).
- Oklahoma, *Eutettix tenellus* on beet in, 594 ; cereal pests in, 261, 274, 599 ; miscellaneous pests in, 79, 340 ; *Pemphigus* on *Poinsettia* in greenhouse in, 257 ; *Chrysobothris femorata* in, 420 ; Melyrid predacious on *Blissus leucopterus* in, 261 ; *Empusa grylli* infesting grasshoppers in, 427.
- Okra (see *Hibiscus esculentus*).
- oldenlandiae, *Theretra*.
- oleae, *Dacus* ; *Parlatoria* (*Syngentaspis*) ; *Saissetia*.
- oleellus, *Prays*.
- Oleic Acid, and ammonia in nicotine spray, 514 ; Stantex Dispensing Oil containing, 530.
- oleivorus, *Phyllocoptruta* (*Phyllocoptes*).
- olens, *Staphylinus*.
- oleracea, *Tipula*.
- oleraceum, *Eurydema*.
- Olfactometers, 264, 265, 391.
- Olibrus bicolor, measures against, on *Taraxacum kok-saghyz* in Kazakhstan, 45.
- olidus, *Eutermes*.
- Oligonychus ulmi, auct. (see *Paratetranychus pilosus*).
- Oligotrophus bergenstammi (see *Apiomyia*).

- Olive, new Eriophyid on, in California, **288**; identity of Geometrid on, in Crete, **171**; pests of, in Cyprus, **270**; *Acherontia atropos* on, in Egypt, **175**; pests of, in Greece, **453**; pests of, in Italy, **98, 473, 568**; bulletin on pests of, in Turkey and other countries, **452**; *Dacus oleae* intercepted in fruit of, in Russian Union, **439**.
- Olive Fruit-fly (see *Dacus oleae*).
- Olive Moth (see *Prays oleellus*).
- Olive Oil (see Oil, Olive).
- oliveri, *Micromyzus*.
- olivieri, *Polyphylla*.
- olivina, *Euphyllura*.
- Omasus vulgaris (see *Pterostichus*).
- omissa, *Tischeria*.
- Omocestus haemorrhoidalis, in Poland, **9**; ecology of, in Russia, **386**.
- Oncideres amputator, on ornamental trees in Jamaica, **181**.
- Oncoccephalus geniculatus, predacious on *Horistonotus uhleri* in S. Carolina, **500**.
- Oncopera, attempted establishment of *Hexamera* against, in Australia, **545**.
- Onion, *Hylemyia antiqua* on, in Britain, **674**; Aphids transmitting virus diseases of, in Germany, **686**; *Thrips tabaci* on, in Porto Rico, **436**; pests of, in U.S.A., **71, 372, 378, 541**; planted among carrots against *Psila rosae*, **497**; insecticides causing injury to, **71, 72**; legislation dealing with fumigation of bulbs of, against *Popillia japonica* in U.S.A., **274**.
- Onion Fly (see *Hylemyia antiqua*).
- Onion Thrips (see *Thrips tabaci*).
- Onobrychis sativa, source of infestation of cotton by *Aphis laburni* in Russia, **216**.
- onobrychis, *Macrosiphum*.
- ononidis, *Myzocallis* (*Therioaphis*).
- Ontario, *Pyrausta nubilalis* on maize in, **25-27**; *Cerosipha forbesi* on strawberry in, **276**; *Forficula auricularia* in, **601**.
- Ooencyrtus clisiocampae, parasite of *Malacosoma disstria* in Minnesota, **597**.
- Ooencyrtus kuvanae, factors determining choice of unparasitized eggs of *Lymantria dispar* by, **302**.
- Ootheca mutabilis, on cowpeas and soy beans in S. Rhodesia, **125**.
- opacicolis, *Promecotheca*.
- opalus, *Pachnaeus*.
- Opatrum sabulosum, baits for, on *Perilla*, etc., in Ukraine, **321**.
- Opatrum triste, bionomics and control of, on tobacco, etc., in Crimea, **41, 42**.
- operculella, *Phthorimaea* (*Gnori-moschema*).
- Operophtera brumata, in Britain, **236**; in Germany, **99, 112, 398, 513**; on oaks in Poland, **438**; on fruit trees, **236, 398, 513**; unable to develop on peach, **513**; bionomics of, **99, 112**; reactions of, to temperature, **40**; measures and tests of insecticides against, **236, 237, 332, 398, 438**.
- Ophiomyia (see *Agromyza*).
- Ophiostoma ulmi (causing Dutch elm disease), distribution of, in Britain, **65**; in Holland, **396**; in U.S.A., **65, 68, 77, 138, 180, 378, 529, 645**; relation of Scolytids to, **65, 68, 77, 378, 396, 529**; destruction of elms against, **378, 645**.
- Ophonus pubescens (see *Harpalus rufipes*).
- Opilo discodirus, predacious on *Hypsipyla robusta* in India, **612**.
- Opius, parasite of *Anastrepha fraterculus* in Brazil, **34**.
- Opius aino (see *Diachasma*).
- Opius anastrephae, parasite of *Anastrepha* spp. in Porto Rico, **502**.
- Opius fijiensis (see *Biosteres*).
- Opius fletcheri, parasite of *Dacus* in Fiji, **213**.
- Opius ilicis, sp. n., parasite of *Phytomyza ilicis* in Br. Isles, **669**.
- Opius incisi, parasite of *Dacus* in Madras, **562, 577**.
- Opius longicaudatus (see *Biosteres*).
- Opius persulcatus (see *Biosteres*).
- Opsimus quadrilineatus, in building timber in U.S.A., **499**.
- Opsophyto arteagai, parasite of *Trigonophymus arrogans* in Argentina, **214**.
- Opuntia spp., failure to establish *Cactoblastis doddi* against, in S. Africa and Australia, **459**; utilisation of other insects against, in Queensland, **344, 345**.
- opuntiae, *Dactylopius*.
- Oraesia emarginata (see *Calpe*).
- Orange, locusts damaging, in Fr. W. Africa, **571**; pests of, in S. Africa, **330**; *Mesolecanium del-tae* on, in Argentina, **238**; *Ceratitis capitata* on, in Cyprus, **270**;

- Pseudococcus citri* on, in France, 266; *Chrysomphalus rossi* on, in New Zealand, 524; *C. pinnulifer diversicolor* on, in S. Rhodesia, 15; pests of, in Trinidad, 24; pests of, in U.S.A., 55, 256, 343, 377, 432-434, 460, 653; insects intercepted on fruit and seedlings of, in Japan and Russia, 50, 439, 616; insecticides and injury to, 6, 278, 653; effects of lead arsenate and copper carbonate on fruit of, 330, 331.
- Orange, Mandarin, Coccids on, in Russian Union, 148, 308; males of *Icerya purchasi* reared on, 6.
- orbiculus*, *Cryptogonus*.
- orbitale*, *Dolichocolon*.
- orbitalis*, *Cheiloneurus*.
- Orchestes* (see *Rhynchaenus*).
- Orchids, Coccid on imported, in Japan, 617.
- Oregma lanigera*, resistance of varieties of sugar-cane to, in Formosa, 444.
- Oregon, pests of forests and timber in, 498, 499, 599; miscellaneous pests in, 596, 599; orchard pests in, 377, 498, 643; *Bruchus pisorum* on peas in, 325; potato pests in, 83, 84; list of strawberry pests in, 498; Aphids and virus diseases in, 83, 84, 369; beneficial insects in, 499, 599, 643; liberation of parasite of *Forficula auricularia* in, 379.
- Oreta carnea*, bionomics and control of, on *Uncaria gambir* in Sumatra, 385, 386.
- Orgilus obscurator*, establishment of, against *Rhyacionia buoliana* in Connecticut, 74, 177.
- Orgyia antiqua*, not parasitised by *Trichogramma evanescens*, 35; tests of ovicides on, 332.
- Oria musculosa*, causing white ear in wheat in Russian Union, 680.
- orichalcea*, *Plusia*.
- oriens*, *Prociophilus*.
- Oriental Peach Moth (see *Cydia molesta*).
- orientalis*, *Anomala*; *Aonidiella* (*Aspidiotus*); *Blatta*; *Bruchocida*; *Dysdercus*.
- Orius*, predacious on *Erythmelus psallidis* in U.S.A., 538.
- Orius insidiosus*, predacious on *Paratetranychus pilosus* in Connecticut, 429.
- Orius niger*, in wheat fields in Central Asia, 453.
- Orius tricolor*, predacious on *Macrosiphum onobrychis* in Utah, 30.
- Ormenis marginata* (see *Petrusina*).
- Ornamental Plants, book on control of diseases and pests of, 437.
- ornatum*, *Trogoderma*.
- ornatus*, *Myzus*; *Phytodietus*.
- ornigis*, *Xenosternum*.
- ornithogalli*, *Prodenia*.
- Ornithopus* spp., pests of, in Portugal and Spain, 495.
- Orthezia praelonga*, measures against, on *Glyricidia* and *Citrus* in W. Indies, 25.
- Orthodichlorobenzene, in mixture for impregnating wood against Coleoptera, 182; soil treatment with, against termites, 422, 694; emulsion of, against Tipulids, 95; and carbon bisulphide, impractical against *Lepidiota frenchi*, 88.
- Orthol K, 529.
- Orthomorpha gracilis*, on greenhouse tomatoes in Britain, 333.
- Orthorrhinus patruelis*, on cacao in New Guinea Territory, 544.
- Orthostethus infuscatus*, in sugarcane fields in Florida, 656.
- Oryctes*, bionomics and control of, on oil palms in Dahomey, 347.
- Oryctes agamemnon*, in Dahomey, 347.
- Oryctes boas*, in Dahomey, 347.
- Oryctes monoceros*, in Dahomey, 347.
- Oryctes rhinoceros*, habits of, in Formosa, 363, 446; in Philippines, 451; *Catascopus facialis* introduced into Samoa against, 641; on coconut, 451, 641.
- Oryza barthi*, relation of locusts to, in Fr. W. Africa, 570.
- oryzae*, *Calandra* (*Sitophilus*); *Chlorops*; *Lema*; *Nilaparvata*; *Pachydiplosis*.
- Oryzaephilus surinamensis*, in oil palm kernels in Dahomey, 349; in flour mills in Russian Union, 685; in stored grain in U.S.A., 341.
- oryzella*, *Oscinis*.
- Oscinella*, on wheat in Czechoslovakia, 468.
- Oscinella frit* (on cereals), wind in relation to spread of, in Britain, 167; in Denmark, 117; bionomics and distribution of, in Russian Union, 454; forms of, in Switzerland, 270; causing white ear in wheat, 680.
- Oscinella frit* var. *pusilla*, status of, 270.
- Oscinis frit* (see *Oscinella*).

Oscinis oryzella, on rice in Japan, 225.

osculus, *Platygaster*.

ostreaeformis, *Aspidiotus*.

ostreata, *Pseudoparlatoria*.

ostrinella, *Moodna*.

Otiorrhynchus, list of species of, on vines in Crimea and Caucasus, 43.

Otiorrhynchus asphaltinus, 43.

Otiorrhynchus brauneri, 43.

Otiorrhynchus caucasicus, 43.

Otiorrhynchus impexus, 43.

Otiorrhynchus ovalipennis, 43.

Otiorrhynchus rugosostriatus, 43.

Otiorrhynchus singularis, on rhododendron in Britain, 295.

Otiorrhynchus sulcatus, on rhododendron in Britain, 295.

Otiorrhynchus turca, on vines in Russian Union, 43, 403.

oudemansi, *Tenuipalpus*.

ovalipennis, *Otiorrhynchus*.

ovatus, *Platycampus*.

Oxya chinensis, measures against, in China, 477.

Oxya intricata, measures against, in China, 477.

Oxya velox (on rice, etc.), bionomics and control of, in Korea, 557; in Philippines, 451.

Oxycarenus luctuosus, on fruit trees in Queensland, 603.

Oxyglypta rugosa, parasite of *Apiomyia bergenstammi*, 5.

oxymorus, *Cryptus*.

Oxypleurites maxwelli, sp. n., on olive in California, 288.

Oyster-shell Scale (see *Lepidosaphes ulmi*).

P.

Pachnaeus opalus, on beans in Florida, 600.

Pachydiplosis oryzae, parasites of, on rice and grasses in India, 577.

Pachymerus nucleorum, in seeds of *Cocos* spp. in Brazil, 661.

Pachynematus montanus, on spruce in Czechoslovakia, 469, 517, 518; parasites of, 518.

Pachynematus scutellatus, Syrphid predacious on, on spruce in Germany, 334.

Pachyneuron aphidis, hyperparasite of *Eriosoma lanigerum* in Jugoslavia, 10.

Pachyprotasis variegata, on potato in Holland, 269.

Pachytylus (see *Locusta*).

pacificus, *Tetranychus*.

padellus, *Hyponomeuta*.

padi, *Anuraphis*.

padi, auct., *Priophorus* (see *P. pallipes*); *Siphonaphis* (see *Rhopalosiphum prunifoliae*).

Pagiophloeus longiclavus, on mahogany in India, 612.

Pagria signata, on soy beans in Japan, 556.

Pagya salvalis, damaging teak seed in Burma, 693.

Palaeococcus, *Rodolia cardinalis* predacious on, on *Casuarina* in Porto Rico, 434.

Palaeococcus rosae, 434.

Paleacrita vernata, measures against, in forests in U.S.A., 28, 74.

Pales maculata (see *Nephrotoma*).

Palestine, miscellaneous pests in, 127, 512; vine moths in, 191; *Aphelinus mali* imported into, from Egypt, 127; *Icerya purchasi* on *Citrus* imported into Cyprus from, 270.

palliatus, *Hylastes* (*Hylurgops*); *Tanyecus*.

pallicornis, *Rhynchaenus* (*Orchestes*).

pallida, *Paratamicea*; *Pristiphora* (*Lygaeonematus*).

pallidifrons, *Erythroneura*.

pallidus, *Tarsonemus*.

pallipes, *Priophorus*.

pallipes, F., *Agonum* (*Carabus*).

pallipes, auct., *Agonoderus* (see *A. lecontei*).

Palm, Ivory Nut (see *Metroxylon*).

Palm, Licuri (see *Cocos coronata*).

Palm, Licurioba (see *Cocos vagans*).

Palm, Oil (see *Elaeis guineensis*).

Palm Borer, Giant (see *Dinapate wrighti*).

palmae, *Asterolecanium*.

palmarum, *Rhynchophorus*.

Palms, pests of, in Brazil, 661;

Dinapate wrighti on, in California and Mexico, 569; *Promecotheca reichei* on, in Fiji, 366; *Oryctes rhinoceros* on, in Formosa, 363;

Brontispa limbata on, in Mauritius, 611; thrips imported into Japan on seedlings of, 616.

(See Coconut, Date Palm and *Elaeis*.)

Palomena prasina, parasite of, on cereals in Germany, 64, 632;

effect of temperature and humidity on, 632.

Palomena viridissima, ecology of, attacking cereals in Germany, 631.

- Palorus depressus*, in oil-palm kernels in Dahomey, 349.
- palpiger*, *Brachyacma*.
- Palpostoma aldrichi*, sp. n., parasite of *Lepidoderma albobirtum* in Queensland, 294.
- Palpostoma testacea*, *P. aldrichi* recorded as, 294.
- paludosa*, *Tipula*.
- Panana Canal Zone, termites in timber in, 180.
- pancratii*, *Brithys*.
- Pandanus* spp., *Aeolarchis sphenotoma* on, in Fiji, 213.
- Pandemis* (see *Tortrix*).
- pandorus*, *Pholus satellitia*.
- panicea*, *Sitodrepa* (*Stegobium*).
- Panicum* spp., *Nymphula depunctalis* on, in Philippines, 364.
- Paniscus ocellatus*, parasite of cutworms in Florida, 657.
- Panolis flammea*, on pines in Germany, 65, 354, 579; pupal weight and egg-production in, 65; parasite of, 354; forecasting outbreaks of, 65, 579.
- Panorpa communis*, predacious on *Erannis* spp. in Poland, 438.
- Panthea coenobita*, in forests in Germany, 466; characters distinguishing, from *Lymantria monacha*, 466.
- Panthorhytes plutus*, on cacao in New Guinea Territory, 277, 544; bionomics and control of, 277.
- papaveris*, *Aphis*.
- Papaya, relation of *Dacus* spp. to, in Formosa, 206; pests and disease of, in Porto Rico, 435, 502; pests of, in Queensland, 603; injured by oil emulsion, 435.
- Papers, treatment of, against *Ctenolepisma*, 510; Psocids damaging, 102.
- paphus*, *Protoparce sexta*.
- Papilio scamander grayi*, on avocado in Brazil, 23.
- Papilio xuthus*, in forests in China, 360.
- papua*, *Calotermes*.
- Papuana huebneri*, measures against, on banana and taro in Gilbert Island, 366.
- papuana*, *Promecotheca*.
- Parabatus cristatus*, parasite of *Monima cruda* in Poland, 438.
- Paradichlorobenzene, uses of, against borers, 256, 277, 420, 526, 527, 544; wood impregnated with mixture containing, against Coleoptera, 181; against clothes moths and carpet beetles, 188, 635, 636; ineffective in spray against *Cydia pomonella*, 134; against *Hylemyia brassicae*, 317; against termites, 89, 544; as a soil fumigant, 88, 89, 366; fumigation of sweet potato tubers with, against *Cylas*, 379, 643; solutions and emulsions of, 134, 526, 527, 544; new method of volatilising, 643; and carbon bisulphide, 88; causing injury to plants, 88, 134, 256, 420.
- paradoxa*, *Cedria*.
- Paraffin (Liquid), tests of penetration of, into tracheae of insects, 579, 580.
- Paraffin Wax, as repellent for *Chrysobothris femorata*, 420.
- Paraguay, *Schistocerca paranensis* in, 543.
- Parahydrotaea jacobsoni*, on tea and bamboo in Formosa, 339, 340.
- Paralispa gularis* (see *Aphomia*).
- parallela*, *Monotoma*.
- Paraluperodes nigrobilineata* (see *Monolepta*).
- paranensis*, *Schistocerca*.
- Paranthrene regalis*, on vines in China, 450.
- Paraphoranthra peruviana*, parasite of *Dysdercus ruficollis* in Peru, 164.
- Paraphoranthra politana*, sp. n., parasite of *Dysdercus mendesi* in Brazil, 22.
- Parapteromalus*, parasite of spruce sawflies in Czechoslovakia, 518.
- Pararcyptera microptera*, ecology and migrations of, in Russia, 386.
- Parasa latistriga*, on plum in S. Rhodesia, 125.
- Parasa sinica*, measures against, on *Platanus orientalis* in China, 449.
- parasae*, *Eurytoma* (see *E. monemae*).
- Parasetigena segregata*, auct. (see *Phorocera silvestris*).
- Parasitic Hymenoptera, factors concerned in host-finding by, 166, 302, 391; physiological causes of immunity from, 598; effect of host size on sex ratio of, 499; control of sex in, 595, 596; effect of cold storage on reproduction of, 144; agar preparation for feeding, 426.
- parasitica*, *Rhodesina*.
- Parastasia inconstans*, on cacao in New Guinea Territory, 544.
- Parastasia marmorata*, on cacao in New Guinea Territory, 544.

- Paratamiclea pallida* var. *hova*, parasite of *Enaria* in Madagascar, 611; introduced into Mauritius against *Lachnosterna smithi*, 611.
- Paratetranychus bioculatus*, on tea in India, 128.
- Paratetranychus citri* (measures against on *Citrus*), in New Zealand, 56; in U.S.A., 256, 257, 261, 433, 459-461, 649, 650.
- Paratetranychus indicus*, life-cycle of, on *Sorghum* and sugar-cane in India, 128.
- Paratetranychus pilosus* (on fruit trees), in New Zealand, 550; in Nova Scotia, 662; in Tasmania, 21; in U.S.A., 429, 432, 535; other food-plants of, 21, 429; sprays against, 21, 429, 432, 535, 536, 550; laboratory tests of ovicides against, 332, 535; predacious enemies of, and sprays destroying them, 429, 662.
- Paratetranychus punicae*, on pomegranate and vines in India, 128.
- Paratheresia*, considered distinct from *Theresia* (q.v.), 143.
- Paratrechina longicornis*, in houses in Formosa, 446; baits for, in Porto Rico, 435.
- Paratrioza cockerelli* (on potato and tomato), in Alberta, 176; in U.S.A., 72, 79, 408, 422, 651; causing Psyllid yellows, 72, 176, 651; stimulating flowering and fruiting of tomato, 73; on other solanaceous plants, 422, 651; bionomics of, 408, 422; measures against, 72, 79, 651.
- Paratrioza mexicana*, in U.S.A., 422.
- pardalina*, *Locustana*; *Myiopardalis* (*Carpomyia*).
- Paregle radicum* (see *Hylemyia*).
- parietaricola*, *Phenacoccus*.
- Paris Green, in baits, 32, 67, 68, 127, 185, 287, 321, 323, 380, 390, 520; dusting with, 244, 245, 271, 277, 291, 370, 381, 417, 418, 463, 661; carriers for, 277, 291, 370, 661; spraying with, 137, 172, 376, 414, 438, 525, 583, 683; and calcium arsenate, 243, 244, 417, 418; and lime, 172, 438, 683; and sugar, 525; and sulphur, 244, 245, 381, 417, 463; against ants, 44; uses of, against termites, 56, 89, 181, 465; tests of toxicity of, to insects, 137, 243, 277, 528, 627; other insecticides compared with, 243, 244, 245, 417, 627.
- Parlatoria oleae*, bionomics of, in Uzbekistan, 474, 552, 553.
- Parlatoria zizyphus*, measures against, on *Citrus* and *Ficus* in Egypt, 509.
- Paroxyna misella*, measures against, on chrysanthemum in Britain, 519.
- Parsley, new Aphid and disease of, in California, 590, 591.
- Parsnip, Aphids on, in Tasmania and California, 21, 590.
- partenopea*, *Encarsia*.
- parvipennis*, *Dasyscaphus*.
- parvispinus*, *Isoneurothrips*.
- parvula*, *Epitrix*; *Erythroneura* (*Zygina*).
- parvulus*, *Pleurotropis*.
- Paspalum*, *Nymphula depunctalis* on, in Philippines, 364.
- Paspalum dilatatum*, planted round banana plantations against *Cosmopolites* in New South Wales, 346.
- Paspalum urvillei*, insects on, in U.S.A., 248, 537, 657.
- passerinii*, *Phloeomyzus*.
- Passiflora edulis*, pests and disease of, in Australia, 448.
- passiflorae*, *Dacus* (*Chaetodacus*).
- Passion Fruit (see *Passiflora edulis*).
- Patanga succincta*, in India, 559; on *Citrus* in Japan, 441.
- Patchiella réaumurii*, in Italy, 512.
- patrona*, *Casmara*.
- patruelis*, *Orthorrhinus*.
- pauperans*, *Termes*.
- Paururus* (see *Sirex*).
- pauvillus*, *Rhynchites*.
- pavonepae*, *Aphis*.
- Pea, *Heliothis armigera* on, in S. Africa, 489; *Cydia nigricana* on, in Britain and Canada, 38; *Bruchus pisorum* on, in Czechoslovakia, 468; Aphids on, in Germany, 686; *Thrips angusticeps* on, in Holland, 233; *Etiella zinckenella* on, in India, 129; pests of, in Japan, 361, 443, 556, 617; pests of, in Porto Rico, 501; pests of, in Russian Union, 454, 552, 679; pests of, in U.S.A., 29-31, 33, 323, 325, 370, 381, 415, 456, 497, 500, 531, 600; susceptibility of varieties of, to *Macrosiphum onobrychis*, 33; virus diseases in, 370, 671, 686; (stored), not attacked by *Calandra granaria*, 119; *Plodia interpunctella* in, 173; X-rays for detecting *Bruchus pisorum* in, 147.

- Pea, Pigeon (see *Cajanus cajan*).
 Pea Aphis (see *Macrosiphum onobrychis*).
 Pea Bruchid (see *Bruchus pisorum*).
 Pea Moth (see *Cydia nigricana*).
 Pea Weevil (see *Sitona lineata*).
 Peach, pests of, in Argentina, 188, 237, 602; pests of, in Australia, 20, 226, 449, 544, 639; pests of, in Baluchistan, 51, 577; *Aulacaspis pentagona* on, in Brazil, 86; *Myzus persicae* on, in Britain, 236; pests of, in China, 450, 668; *M. persicae* on, in Czechoslovakia, 468; pests of, in France, 195, 623; pests of, in Germany, 157, 267, 633, 687; *M. persicae* on, in Holland, 578; Aphids on, in Hungary, 458; pests of, in India, 503; *Cydia* spp. on, in Italy, 4, 197, 199, 235, 515; *Dacus psidii* on, in New Caledonia, 131, 132; Coccids on, in Russian Union, 316, 474, 552; *Ceratitis capitata* intercepted in fruit of, in Russian Union, 439; *Cydia molesta* on, in Switzerland, 438; pests of, in U.S.A., 34, 77, 255, 261, 288, 340, 377, 429, 430, 526, 527, 532, 623, 650; not attacked by *Aegeria typhiaeformis*, 630; susceptibility of, to *Aspidiotus perniciosus*, 690; *Operophtera brumata* unable to develop on, 513; insecticides and injury to, 255, 256, 272, 309, 425, 426, 458, 526, 527.
 Peach Aphis (see *Myzus persicae*).
 Peach Borer (see *Aegeria exitiosa*).
 Peach Moth, Oriental (see *Cydia molesta*).
 Pear, *Cydia pomonella* on, in Algeria, 192; pests of, in Australia, 20, 21, 89, 292, 293, 390; pests of, in Baluchistan, 51, 577; pests of, in China, 450; pests of, in France, 168, 357, 622, 689; pests of, in Germany, 114, 155, 398, 632; pests of, in India, 503, 577; pests of, in Italy, 4, 115, 197, 235, 296, 297, 516; pests of, in Japan, 207, 225, 361, 557, 629, 630; gall-midges on, in Korea, 557; pests of, in Manchuria, 340; *Monosteira unicastata* on, in Morocco, 359, 570; pests of, in New Zealand, 159; *Psylla* spp. on, in Rumania, 357; pests of, in Russian Union, 43, 316, 474, 552; *Ceresa bubalus* on, in Switzerland, 169, 438; pests of, in U.S.A., 377, 383, 409, 410, 432, 434, 498, 535; resistance of varieties of, to *Apiomyia bergensstammi*, 5; susceptibility of, to *Aspidiotus perniciosus*, 690; types of injury to, by *Monosteira unicastata* and *Eriophyes pyri*, 359, 409; review of Cecidomyiids on, 557; effects of oil sprays on, 6, 94; problem of arsenic residues on fruit of, 168, 192, 193, 293.
 Pear, Sand (see *Pyrus sinensis*).
 Pear Blossom Weevil (see *Anthonomus piri*).
 Pear Leaf Blister Mite (see *Eriophyes pyri*).
 Pear Leaf Midge (see *Dasyneura pyri*).
 Pear Psyllid (see *Psylla pyricola*).
 Pear Sawfly (see *Caliroa limacina*).
 Pear Scale, Italian (see *Epidiaspis leperii*).
 Pear Thrips (see *Taeniothrips inconsequens*).
 Peat, for preparing fixed nicotine sprays, 545.
 Pecan, pests of, in U.S.A., 255, 372, 420; oil emulsions causing injury to, 255.
 Pecan Nut Case-bearer (see *Acrobasis caryae*).
Pectinophora gossypiella (see *Platyedra*).
pectinophorae, *Chelonus*; *Microbracon* (*Habrobracon*).
pectoralis, *Platycampus*.
pedatoria, *Eupelmella*.
pedestris, *Podisma*.
Pediculoides ventricosus, predacious on *Ephestia kuehniella* in Germany, 400.
Pediculopsis graminum, causing white ear of grasses and cereals in Russian Union, 151, 680; bionomics and control of, 151.
pelargonii, *Macrosiphum* (*Aulacorthum*).
Pelargonium inquinana, Coccid on, in Japan, 617.
pellicia, *Cyrtorhinus*.
pellio, *Attagenus*.
pellionella, *Tinea*.
pellucida, *Cammula*.
pellucidator, *Leptocryptus*.
Pelobates fuscus, observations on, in Russia, 407.
pelochra, *Draecenura*.
Pempheres, parasites of, in India, 505, 506.
Pempheres affinis, parasites of, in India, 506; on cotton in Siam, 49.

- pempheridis*, *Entedon*.
pempheriphila, *Euderus*.
Pemphigus, measures against, on *Poinsettia* in Oklahoma, **257**; use of species of, as food for *Hippodamia convergens*, **81**.
Pemphigus protospirae, in Italy, **512**.
penetrans, *Macroglenes*.
Penicillium, *Necrobia rufipes* feeding on, **584**.
Penicillium brevicompactum, experiments with, infesting *Apion* spp. in Sweden, **118**.
penitalis, *Pyrausta*.
Pennsylvania, miscellaneous pests in, **79, 597, 599, 600**; orchard pests in, **52, 535**; *Acantholyda erythrocephala* on pines in, **651**; beneficial insects and biological control in, **377, 599, 655**.
pennsylvanicus, *Camponotus herculeanus*; *Gryllulus* (*Gryllus*) *assimilis*.
pentagona, *Aulacaspis* (*Pseudaulacaspis*).
Pentalonia nigronervosa (transmitting virus diseases of banana and Manila hemp), in Australia, **289**; measures against, in Fiji, **213**; in Haiti, **289**; in Philippines, **265, 667**.
Pentatoma rufipes, in Germany, **218, 631**; ecology of, attacking cereals, **631**; predacious on *Lymantria monacha*, **218**.
Penthaleus major (*haematopus*), on peas in California, **600**; on wheat in Japan, **556**.
Pentodon idiota, beet protecting *Scorzonera* against, in Russian Union, **679, 680**.
Peppers (see *Capsicum*).
peregrina, *Psylla*.
Peregrinator biannulipes, predacious on *Dinoderus minutus* in Porto Rico, **423**.
perforans, *Xyleborus*.
pergandei, *Phenacoccus*.
Perichitena vigorsi, on *Cordia myxa* in Burma, **693**.
Peridroma saucia, measures against, in Wisconsin, **32**.
Perilitus coccinellae, in Formosa, **618**; lists of hosts of, **618**.
Perilitus epitricis, parasite of *Phyllostreta* in Louisiana, **373**.
Perilla, *Pyrausta phoenicealis* on, in Japan, **210**; *Opatrum sabulosum*, on, in Ukraine, **321**.
Periplaneta americana, toxicity of *Bacillus cereus* to, **81**.
Perisierola, parasite of *Cydia molesta* in Australia, **640**; parasite of *Platyedra gossypiella* in Porto Rico, **503**.
Perisierola nigrifemur, **503**.
Perkinsiella vastatrix, vector of Fiji disease of sugar-cane in Philippines, **667**.
perniciosi, *Prospaltella*.
perniciosus, *Aspidiotus* (*Aonidiella*, *Comstockiella*); *Pseudococcus*.
pernyi, *Antheraea*.
Peronea variana, on spruce in Quebec, **464**.
Perrisia (see *Dasyneura*).
Persea gratissima (*americana*) (see *Avocado*).
perseae, *Saissetia*.
Persectania ewingi, measures against, on cereals and grasses in Victoria, **389**.
persegnis, *Cephalobus*.
Persia, locusts in, **482**.
persicae, *Lecanium*; *Myzus* (*Myzodes*, *Phorodon*).
persicae-niger, *Anuraphis*.
persimilis, *Saissetia*.
Persimmon, *Monema flavescens* on, in Japan, **207**; relation of *Dacus* spp. to, in Formosa, **206**; *Ceratitis capitata* on, in France, **195**; *Carpophilus hemipterus* in rotting fruits of, **167**.
persona, *Xyleutes*.
personata, *Euxoa detersa*.
personatus, *Chrysomphalus* (*Aspidiotus*).
persuasoria, *Rhyssa*.
persulcatus, *Biosteres* (*Opius*).
Peru, Coccids on *Citrus* in, **165, 511**; *Lymantriid* on coca in, **165**; cotton pests in, **164, 385**; beneficial insects in, **164**; parasites introduced into U.S.A. from, against *Diatraea*, **658**.
peruella, *Mescinia*.
peruviana, *Acaulona*; *Paraphoranthia*.
peruvianus, *Dermestes*.
petiolaris, *Mesochorus*.
Petrol, uses of, against insects, **128, 233, 295, 577**; in mixture for impregnating wood against Coleoptera, **182**.
Petrusina marginata, fungus infesting, on *Jasminum pubescens* in Porto Rico, **501**.
Petunia, not attacked experimentally by *Phthorimaea operculella*, **289**.
Peuceetia viridans, predacious on insects in U.S.A., **251, 500**.

- Pexopsis pyrrhaspis*, parasite of *Hypopholis* in S. Africa, **611**; introduced into Mauritius against *Lachmosterna smithi*, **611**.
peyerimhoffi, *Dioryctria*.
Pezomachus (see *Gelis*).
Phaedon armoraciae, on horse-radish in Germany, **110**.
Phaedon brassicae, measures against, in China, **450**.
Phaedon cochleariae (on crucifers), in Germany, **110**; in Russian Union, **439**.
Phaenocarpa leverii, sp. n., parasite of *Dacus* in Fiji, **213, 605**.
Phaenogenes nigridens, introduced into U.S.A. against *Pyrausta nubilalis*, **381**.
phaeorrhoa, *Nygmia*.
phaeosoma, *Arctia caja*.
Phalacrus fimetarius (*coruscus*), on *Taraxacum kok-saghyz* in Kazakhstan, **45**.
Phalaenoides glycinae, on vines in Australia, **294, 365**; parasite of, **294**.
Phalera flavescens, bionomics of, in Formosa, **206**; on cherry in Japan, **211**.
Phalonia posterana, on *Taraxacum kok-saghyz* in Kazakhstan, **45**.
Phanerotoma planifrons, introduced into U.S.A. and Porto Rico against *Etiella zinckenella*, **381, 382**.
phantoma, *Sirex*.
Phanurus (see *Telenomus*).
pharaonis, *Monomorium*.
phaseoli, *Agromyza*; *Bruchus* (*Callosobruchus*); *Trifidaphis*.
Phaseolus lunatus (see Lima Beans).
Phaseolus radiatus (with var. *aureus*), *Bruchids* reared on, in Japan, **361, 557, 617**.
Phaseolus vulgaris (see Beans).
Phassus, on *Altingia excelsa* in Java, **227**.
Phassus malabaricus, measures against, on teak in India, **612**.
Phaulacridium vittatum, in New South Wales, **130**.
Pheasants, protection of *Formica rufa* against, **564**.
Pheidole, attacking *Diparopsis castanea* in S. Africa, **489**.
Pheidole javana, in houses in Formosa, **446**.
Pheidole punctulata, associated with *Pseudococcus kenyae* in Kenya, **665**.
Pheletes agonus (see *P. ectypus*).
Pheletes californicus, in U.S.A., **410, 418**; damage to potatoes by, **418**; trapping adults of, **410**.
Pheletes canus, in U.S.A., **28, 418**; damage to potatoes by, **418**; reactions of, to arsenicals, **28**.
Pheletes ectypus, measures against, on tobacco in Connecticut, **177**.
Phenacaspis prunorum, sp. n., on plum in Caucasus, **680**.
phenacocci, *Leptomastix*.
Phenacoccus aceris (on fruit trees), measures against, in Nova Scotia, **662**; in Uzbekistan, **474**.
Phenacoccus agropyri, sp. n., on *Agropyrum* in Caucasus, **680**.
Phenacoccus caucasicus, sp. n., in Caucasus, **680**.
Phenacoccus gossypii, resistance of, to parasitism by *Coccophagus gurneyi*, **598**; parasitised by *Leptomastix dactylopii*, **598**.
Phenacoccus hirsutus, new introduced parasite of, in Egypt, **506**.
Phenacoccus parietaricola, sp. n., in France and Corsica, **48**.
Phenacoccus pergandei, susceptibility of varieties of elm to, in Japan, **443**.
Phenacoccus solani, parasites of, **598**.
Phenothiazine (see *Thiodiphenylamine*).
Phenyl Phenol (Sulphonated), uses of, in dusts and sprays, **177, 179**.
Phigalia sinuosaria, bionomics of, on *Pyrus sinensis* in China, **668**; in Japan, **668**.
Philaenus leucophthalmus, not transmitting potato viruses in Oregon, **84**.
philanthus, *Hoplia*.
philippinensis, *Spalangia*.
Philippines, cotton pests in, **183, 184**; *Nymphula depunctalis* on rice in, **364**; locusts in, **451, 478, 485, 486**; miscellaneous pests in, **451, 667**; insects and virus diseases of plants in, **365, 667**; beneficial insects and biological control in, **184, 364, 452**; beneficial insects introduced into other countries from, **367, 665**; *Leucopholis irrorata* intercepted in Hawaii in aircraft from, **368**.
Phloeomyzus passerinii, in Italy, **512**.
Phloeosinus armatus, bionomics of, on cypresses in Turkey, **219**.

- Phloeosinus bicolor* (on conifers), in France, **225**; in Turkey, **219**; maternal galleries of, **225**.
- Phloeosinus cedri*, on cedar in Algeria, **226**.
- Phloeosinus cristatus*, new parasite of, on *Cupressus macrocarpa* in U.S.A., **324**.
- Phloeosinus prostratus*, on *Juniperus* in Algeria, **226**.
- Phloeosinus thujae*, on *Juniperus* in France, **226**.
- Phloeosinus turkestanicus*, bionomics of, on junipers in Central Asia, **153**.
- Phloeothrips kinugasai*, sp. n., intercepted in Japan from Japanese Mandated Islands, **50, 616**.
- Phloeotribus liminaris*, measures against, on peach in Illinois, **527**.
- Phloeotribus scarabaeoides*, on olive in Italy, **473, 568**; bionomics and control of, **473**.
- phloxiphaga*, *Heliothis*.
- Phlugiola dahlemica*, sp. n., bionomics of, in hot-houses in Germany, **109**.
- Phlugiola redtenbacheri*, *P. dahlemica* recorded as, **110**.
- phoenicealis*, *Pyrausta*.
- phoenicis*, *Mackiella*; *Rhynchophorus*; *Tenuipalpus*.
- Phoenix*, new mite on, in greenhouse in Holland, **301**.
- Phoenix dactylifera* (see Date Palm).
- Pholus* spp., parasitised by *Apanteles congregatus* in U.S.A., **253**.
- Phomopsis*, insects associated with, on pistachio in Greece, **452, 453**.
- Phonoctonus lutescens*, predacious on *Dysdercus* in Sudan, **574**.
- Phoranthella mendesi* (see *Hyalomyia*).
- Phorbia*, doubtful identity of, **114**. (See *Hylemyia*.)
- Phorocera agilis*, considered correct name for *P. silvestris* (q. v.), **581**.
- Phorocera silvestris*, parasite of *Lymantria monacha* in Germany, **335, 580, 581**; bionomics of, **580, 581**.
- Phorodon humuli*, on plum and hops in Britain, **332, 333**; tests of ovicides against, **332**.
- Phorodon persicae* (see *Myzus*).
- Phosphides, danger of using, in baits, **102**.
- Phostria piasusalis*, on *Coleus parviflora* in Madras, **129**.
- Photoptera, parasite of *Setora nitens* in Java, **347**.
- Phryxe vulgaris* (see *Zenillia*).
- Phthia*, vector of *Nematospora*, **389**.
- Phthia picta*, on tomato in Jamaica, **239**.
- phthisicus*, *Mischocyttarus*.
- Phthorimaea*, not considered distinct from *Gnorimoschema*, **289**.
- Phthorimaea gudmannella*, new parasite of, in Virgin Islands, **133**.
- Phthorimaea heliopa* (on tobacco), in S. Africa, **360**; measures against, in Mysore, **625**; in S. Rhodesia, **125**.
- Phthorimaea lycopersicella*, on tomato in California, **133, 379, 432**; new parasite of, **133**; measures against, **379**.
- Phthorimaea operculella*, in S. Africa, **360**; bionomics of, in Brazil, **289**; development of, in imported potato tubers in Germany, **583**; establishment of *Apanteles scutellaris* against, in Hawaii, **367**; in S. Rhodesia, **125**; factors affecting incidence of, in Victoria, **90, 389**; on potato, **90, 289, 367, 389**; on tobacco, **125, 289, 360**; on other solanaceous plants, **289, 389**; cultural measures against, **90, 389**.
- Phthorophloeus liminaris* (see *Phloeotribus*).
- Phycitinae, cactus-feeding species of, in America, **511**.
- Phygadeuon latipetiolator*, parasite of *Rhogas dendrolimi* in Japan, **211**.
- Phylacter calcarator* (see *Zelee*).
- Phyllaphis fagi*, measures against, on beech in Germany, **353**.
- Phyllobius oblongus*, on apple in Britain, **333**.
- Phyllobius pyri*, on apple in Britain, **333**.
- Phyllocoptes*, measures against, on vines in Queensland, **365**.
- Phyllocoptes cornutus*, on peach in California, **33**.
- Phyllocoptes lycopersici*, measures against, on tomato in Queensland, **187**.
- Phyllocoptes oleivorus* (see *Phyllocoptruta*).
- Phyllocoptinae, key to genera of, **34**.
- Phyllocoptruta oleivorus*, measures against, on *Citrus* in Florida, **256, 257, 259**.
- Phyllopertha* (see *Anomala*).
- Phyllophaga* (see *Lachnosterna*).
- Phyllotoma memorata*, in Maine, **275**; outbreak of, on birch in Quebec, **275**; number of instars of, **275**;

- weight of foliage in relation to, **143**; nicotine sulphate against, **275**.
- Phyllotreta*, on beet in Britain, **674**; on *Taraxacum* and crucifers in Russian Union, **45**, **153**, **439**; methods of counting hibernating, in soil, **153**.
- Phyllotreta armoraciae*, on horse-radish in Germany, **110**.
- Phyllotreta atra*, on horse-radish in Germany, **110**.
- Phyllotreta cruciferae*, on horse-radish in Germany, **110**; on *Taraxacum kok-saghyz* in Kazakhstan, **45**.
- Phyllotreta nemorum*, on horse-radish in Germany, **110**.
- Phyllotreta undulata*, on horse-radish in Germany, **110**.
- Phyllotreta vittata*, on crucifers in Japan, **624**; measures against, in China, **450**.
- Phyllotreta vittata discedens*, bionomics and control of, on crucifers in Louisiana, **373**.
- Phyllotreta vittula*, on wheat in Central Asia, **453**.
- Phylloxera*, **392**.
- Phylloxera vitifoliae (vastatrix)* (on vines), in Brazil, **34**; in Germany, **688**; in Poland, **403**; in Queensland, **365**; in Russian Union, **403**; factors affecting injury by, in Switzerland, **46**; legislative and other measures against, in Tunisia, **10**, **11**; forms or races of, **46**, **403**, **688**; condition of European vines not affecting infestation by, **112**.
- Phymateus viridipes*, in Belgian Congo, **476**.
- Physalis francheti*, *Heliothis assulta* transmitting virus disease in, in Japan, **444**.
- Physalis mollis*, *Paratrioza cockerelli* on, in Texas, **651**.
- Physalis peruviana*, *Epilachna vigintioctopunctata* on, in Fiji, **641**.
- Physiology (of insects), text-book on, **436**.
- Physokermes*, new *Lecanium* recorded as, on rose in Bulgaria, **402**.
- Phytalus* (see *Lachnosterna*).
- Phytodietus ornatus*, parasite of Tortricids in Transcaucasia, **587**.
- Phytoecia coerulea (rufimana)*, bionomics and control of, on crucifers in Azerbaijan, **320**.
- phytolymus*, *Maleuterpes* (see *M. spinipes*).
- Phytometra* (see *Plusia*).
- Phytomyza affinis (nigricornis)*, *P. atricornis* recorded as, on vegetables in Japan, **207**, **443**, **444**; synonymy of, **443**, **444**.
- Phytomyza aquifolii* (see *P. ilicis*).
- Phytomyza atricornis*, on *Cynara scolymus* in California, **600**; bionomics of, recorded as *P. affinis (nigricornis)* on vegetables in Japan, **207**, **443**, **444**.
- Phytomyza ilicicola* (on *Ilex* spp.), confined to N. America, **669**.
- Phytomyza ilicis* (on *Ilex aquifolium*), in Br. Columbia, **669**; parasites of, in Br. Isles, **669**; synonymy of, **669**.
- Phytomyza nigra*, on cereals and grasses in Japan, **208**.
- Phytomyza nigricornis* (see *P. affinis*).
- Phytomyza rufipes (ruficornis)*, on horse-radish in Germany, **110**.
- Phytonomus* (see *Hypera*).
- piasusalis*, *Phostria*.
- Picea* (see Spruce).
- Picea abies*, pests of: in Canada, **464**, **647**; in Czechoslovakia, **469**; in U.S.A., **529**, **540**, **647**.
- Picea canadensis*, *Chermes ishiharai* on, in Japan, **91**.
- Picea excelsa* (see *P. abies*).
- Picea glauca*, pests of: in Canada, **368**, **464**, **647**; in U.S.A., **540**, **647**.
- Picea glehni*, pests of, in Japan, **91**, **211**, **339**.
- Picea jezoensis*, pests of, in Japan and Sakhalin, **19**, **91**, **211**, **339**, **615**.
- Picea mariana*, *Diprion polytomum* on, in Canada and U.S.A., **368**, **647**; not attacked by *Pissodes strobi* in Quebec, **464**.
- Picea pungens*, *Diprion polytomum* on, in Canada and U.S.A., **647**; insecticides causing injury to, **529**.
- Picea rubra*, *Diprion polytomum* on, in Canada, **647**; not attacked by *Pissodes strobi* in Quebec, **464**; pests of, in U.S.A., **369**, **540**, **647**; *Pikonema alaskensis* reared on, **464**.
- Picea sitchensis*, *Diprion polytomum* on, in Canada and U.S.A., **647**; *Chermes* spp. on, in Japan and Sakhalin, **91**.
- piceae*, *Chermes (Adelges)*.
- piceaella*, *Recurvaria*.
- piceaperda*, *Dendroctonus*.
- piceus*, *Attagenus*.

- Picromerus bidens*, predacious on *Lymantria monacha* in Germany, 218.
- picta*, *Phthia*; *Scyllina*; *Zenillia* (*Exorista*).
- pictipes*, *Aegeria* (*Synanthedon*).
- pictus*, *Poeciloceris*.
- Pieris*, on crucifers in Russian Union, 439.
- Pieris brassicae* (on crucifers), in British Isles, 608; in Canada, 459; in Germany, 110, 232, 354; in Russian Union, 109, 306, 307, 310, 455, 589; migrations of, in Europe, 608; parasitised by *Apanteles plutellae*, 505; relation of races of *Trichogramma evanescens* to, 109, 589; *Troilus luridus* attacking, 354; experiments with fungi and bacteria against, 306, 307, 455; attempted infection of, with *Nosema cactoblastis*, 459; influence of crowding on larvae of, 232; tests of insecticides against, 250, 310.
- Pieris napi*, on horse-radish in Germany, 110.
- Pieris rapae* (on crucifers), legislation against introduction of, into Australia, 344; in China, 450; in Germany, 110; sometimes migrating to tobacco in Japan, 210; in Manchuria, 361; in Russia, 109, 307, 455; in U.S.A., 249, 250, 370; parasites of, 109, 505; experiments with bacteria against, 307, 455; measures against, 249, 370, 450.
- Piesma*, characters of Polish species of, 352.
- Piesma capitatum*, forms of, not transmitting crinkle disease of beet in Poland, 163, 352; on *Atriplex*, 352.
- Piesma maculatum* (and var. *viride*), not transmitting crinkle disease of beet in Poland, 163, 352; on *Atriplex*, 352.
- Piesma quadratum* (on beet), in Germany, 688; in Poland, 105, 163, 350, 351, 352; other food-plants of, 163, 351, 352; types of crinkle disease transmitted by, 163, 351, 688; bionomics and migrations of, 163, 351; experiments with *Beauveria* against, 105; trap-strips of beet against, 163, 351, 352; conferences on status and control of, 352.
- Piesma quadratum* var. *dilatatum*, 352.
- Piestopleura thomsoni*, parasite of *Macroglenes penetrans* in Holland, 268.
- Piezotrachelus* (see *Apion*).
- Pigeon Peas (see *Cajanus cajan*).
- Pigeons, grain mites spread by, 552.
- piger*, *Cleonus*; *Microbracon*.
- pigra*, *Pygaera*.
- Pikonema alaskensis* (on spruce), in Canada, 464, 540; bionomics and control of, in Maine, 540.
- Pikonema dimmocki*, on spruce in Quebec, 464.
- pillariana*, *Sparganothis* (*Oenophthira*).
- pilosus*, *Paratetranychus*.
- Pimelephila ghesquierei*, bionomics and control of, on oil palms in Dahomey, 348.
- pimpinellae*, *Anthrenus*.
- Pimpla*, parasite of *Cydia nigricana* in Britain, 38; parasite of *Pissodes notatus* in Finland, 8; parasite of *Pyrausta* and *Sesamia* in Italy, 296; parasite of *Neosyrista similis* in Japan, 211.
- Pimpla capulifera*, parasite of *Lymantria monacha* in Germany, 581.
- Pimpla disparis*, parasite of *Dendrolimus spectabilis* in Japan, 211.
- Pimpla examiner*, parasite of *Lymantria monacha* in Germany, 581.
- Pimpla instigator*, parasite of *Lymantria monacha* in Germany, 581.
- Pimpla maculator*, parasite of *Vanessa cardui* in Transcaucasia, 587.
- Pimpla nucum*, parasite of *Aegeria typhiaeformis* in Italy, 630; parasitised by *Dibrachys cavus*, 630.
- Pimpla pluto*, parasite of *Dendrolimus spectabilis* in Japan, 211.
- Pimpla roborator*, parasite of *Etiella zinckenella* in Iberian Peninsula, 495.
- Pimpla ruficollis*, olfactory responses of, to food-plant of host in Britain, 391.
- Pimpla spectabilis*, parasite of *Rhythmonotus takagii* in Japan, 211.
- pinastri*, *Sphinx*.
- Pine (*Pinus*), *Chermes boernerii* mistaken for *C. pini* on, in Australia, 262, 546; *Chermes* spp. on, in Britain, 262; restrictions on importation of, into Britain, 356; pests of, in Canada, 53, 464; pests of, in China, 449,

- 451, 614; pests of, in Czechoslovakia, 469; *Diprion pini* on, in Danzig Territory, 105, 397; new Coccids on, in Dominican Republic, 392; *Pissodes* spp. on, in Finland, 8, 9; pests of, in Germany, 65, 105, 231, 354, 397, 400, 401, 521, 579; new Coccid on, in India, 224; *Thaumetopoea pityocampa* on, in Italy, 516; pests of, in Japan, 209, 211, 339, 441; *Hylastes ater* on, in New Zealand, 504; pests of, in Poland, 401, 670, 676; pests of, in Rumania, 355; pests of, in Sweden, 123; pests of, in Turkey, 219; pests of, in U.S.A., 53, 324, 329, 392, 461, 530, 568, 599, 651; effect of feeding *Lymantria monacha* on, 399; symbiosis of Siricids with fungi in, 401; insecticides causing injury to, 530; (timber), *Hylotrupes bajulus* in, 204, 335; *Micromalthus debilis* in gold mines in, 60; tests of preservatives against termites in, 180.
- Pine, Jack (see *Pinus banksiana*).
- Pine, Japanese Red (see *Pinus densiflora*).
- Pine, Loblolly (see *Pinus taeda*).
- Pine, Mugho (see *Pinus mugo*).
- Pine, Pitch (see *Pinus rigida*).
- Pine, Ponderosa (see *Pinus ponderosa*).
- Pine, Red (see *Pinus resinosa*).
- Pine, Scots (see *Pinus sylvestris*).
- Pine, White (see *Pinus strobus*).
- Pine Beetle, Southern (see *Dendroctonus frontalis*).
- Pine Geometrid (see *Bupalus piniarius*).
- Pine Sawflies (see *Acantholyda erythrocephala* and *Diprion pini*).
- Pine Shoot Moth (see *Rhyacionia buoliana*).
- Pine Sphingid (see *Sphinx pinastri*).
- Pine-tar Oil (see Oil, Pine-tar).
- Pineapple, *Anomala orientalis* on, in Hawaii, 367; Coccids on, in Mauritius, 611; *Pseudococcus brevipes* on, in Porto Rico, 502.
- pineti*, *Brachonyx*.
- pinetum*, *Diprion* (*Neodiprion*).
- Pineus* (see *Chermes*).
- pini*, *Chermes* (*Pineus*); *Cryptoparlatorea*; *Dendrolimus*; *Diprion* (*Pteronus*); *Lestodiplosis*; *Lygaeonematus* (see *Pristiphora abietina*); *Pissodes*.
- piniarius*, *Bupalus*.
- pinifoliae*, *Chionaspis*.
- piniperda*, *Myelophilus* (*Blastophagus*).
- piniphilus*, *Pissodes*.
- Pinnaspis buxi*, introduction of Coccinellids against, on coconut in Hawaii, 366, 367.
- pinnulifer*, *Chrysomphalus*.
- Pinthaeus sanguinipes*, feeding habits of, in Germany, 354.
- Pinus* (see Pine).
- Pinus banksiana*, *Diprion lecontei* on, in Michigan, 461.
- Pinus caribaea*, *Diprion lecontei* on, in Canada and U.S.A., 53.
- Pinus densiflora*, *Acantholyda erythrocephala* on, in U.S.A., 651.
- Pinus echinata*, *Diprion lecontei* on, in Canada and U.S.A., 53.
- Pinus halepensis*, *Aesiotes leucurus* on, in New South Wales, 602; *Chrysobothris igniventris* on, in Turkey, 219.
- Pinus koraiensis*, *Saperda laterimaculata* on, in Russian Far East, 43.
- Pinus longifolia*, treatment of timber of, against *Platypus biformis* in India, 612.
- Pinus massoniana*, *Dendrolimus punctatus* on, in China, 449.
- Pinus mercusi*, pests of, in Netherlands Indies, 577, 578.
- Pinus monophylla*, *Pityophthorus* on, in U.S.A., 324.
- Pinus mugo*, *Diprion sertifer* on, in Czechoslovakia, 469; *Acantholyda erythrocephala* on, in U.S.A., 279, 651.
- Pinus nigra*, *Chrysobothris igniventris* on, in Turkey, 219; (and var. *austriaca*), *Acantholyda erythrocephala* on, in U.S.A., 279, 651.
- Pinus pinaster*, *Chermes boernerii* recorded as *C. pini* on, in Australia, 262, 546.
- Pinus ponderosa*, pests of, in U.S.A., 140, 377, 378, 599; type of injury to, by *Pityophthorus* spp., 140.
- Pinus radiata*, *Chermes boernerii* recorded as *C. pini* on, in Australia, 262, 546; *C. boernerii* restricted to, in U.S.A., 546; *Aesiotes leucurus* on, in New South Wales, 602.
- Pinus resinosa*, pests of, in U.S.A., 73, 177, 279, 461, 529, 600, 651; insecticides causing injury to, 529.
- Pinus rigida*, *Diprion lecontei* on,

- in Canada, **53**; pests of, in U.S.A., **53, 378**.
- Pinus strobus*, *Pissodes strobi* on, in Quebec, **464**; pests of, in U.S.A., **279, 461, 651**; weight of foliage of, in relation to insects, **143**.
- Pinus sylvestris*, olfactory responses of parasites of *Rhyacionia buoliana* to, in Britain, **391**; pests of, in Czechoslovakia, **469**; pests of, in U.S.A., **461, 529, 651**; insecticides causing injury to, **529**.
- Pinus sylvestris* var. *hamata*, *Brachionyx pineti* on, in Rumania, **355**.
- Pinus sylvestris* var. *turfosa*, *Anthonomus varians* on, in Rumania, **355**.
- Pinus taeda*, *Dendroctonus frontalis* on, in U.S.A., **377, 599**.
- Piophilus casei* (Cheese Skipper), *Necrobia rufipes* predacious on, **584**; cage for rearing, **78**.
- pipiens*, *Culex*.
- Pipunculus*, new species of, in U.S.A., **596**.
- Pipunculus confraternus* var. *melanis*, n., parasite of *Eutettix tenellus* in Utah, **596**.
- Pipunculus trochanteratus* var. *tenuellus*, n., parasite of *Eutettix tenellus* in Utah, **596**.
- piri*, *Anthonomus*.
- piricola*, *Diaspis* (see *Epidiaspis leperii*).
- pirifoliae*, *Epitrimerus*.
- Piripiri* (see *Acaena*).
- pirivorella*, *Numonia* (*Nephoptyx*).
- pisi*, *Contarinia*; *Macrosiphum* (*Acyrtosiphon*, *Illinoia*) (see *M. onobrychidis*).
- pisivorus*, *Kakothrips*.
- pisorius*, *Ichneumon*.
- pisorum*, *Bruchus*.
- Pissodes gyllenhalii*, bionomics of, on conifers in Finland, **8**.
- Pissodes harcyniae*, natural enemies of, on spruce in Finland, **9**.
- Pissodes notatus*, bionomics of, on conifers in Finland, **8**.
- Pissodes pini*, parasite of, on pine in Finland, **8**.
- Pissodes piniphilus*, on pine in Finland, **9**.
- Pissodes strobi*, on conifers in Quebec, **464**.
- Pissodes validirostris*, bionomics of, on conifers in Finland, **8**.
- Pistacia vera* (Pistachio), pests of, in Greece, **452, 453**; *Megastigmus ballestrerii* on, in Sicily, **452**; insects associated with *Phomopsis* on, **452, 453**.
- pistaciae*, *Eurytoma*; *Tinea*.
- Pisum sativum* (see Pea).
- Pitch Pine (see *Pinus rigida*).
- Pith Helmets, damaged by *Rhizopertha dominica* in India, **612**.
- pityocampa*, *Thaumetopoea*.
- Pityophthorus*, new parasite of, on *Pinus monophylla* in U.S.A., **324**; unusual injury to *P. ponderosa* by, **140**.
- Pityophthorus confertus*, on *Pinus ponderosa* in California, **140**.
- Pityophthorus confinis*, on *Pinus ponderosa* in California, **140**.
- Plaesus javanus* (predacious on *Cosmopolites sordidus*), introduced into Cook Islands, **212**; in Fiji, **212, 238, 365**; introduced into Formosa, **205**; introduced into Jamaica, **212, 238**; in Java, **205**; introduced into Tahiti, **212, 365**.
- plagiata*, *Anaitis*; *Tiracola*.
- plagiatus*, *Cnecorrhinus*; *Prosoestus* (*Derelomus*).
- planifrons*, *Phanerotoma*.
- Plant Diseases (see Bacteria, Fungi and Virus Diseases).
- Plant Pest Legislation, in Australia, **130, 274, 344, 592**; criticism of, in Australia, **184**; against introduction of *Anthonomus grandis* into Barbados, **661**; in Br. Isles, **355, 356**; against fruit-flies in Hawaii, **344**; in Jugoslavia, **592, 690**; in Kenya, **274, 666**; in Tunisia, **11, 344**; list of Coccids subject to, in Russian Union, **58**; in U.S.A., **176, 274, 275, 344, 591**; summaries of, in other countries, **176, 274, 344, 592**.
- Plantago lanceolata*, *Anuraphis roseus* on, in Connecticut, **428**.
- Plants, injuries to, caused by insect toxins, **624**; relation between condition of, and insect attack, **507**; papers on breeding and selection of, for resistance to insects, **285, 456**; bibliography on insecticides derived from, **392**.
- planus*, *Smerinthus*.
- platani*, *Lithocolletis*.
- Platanus occidentalis*, *Lithocolletis platani* on, in Turkey, **219**.
- Platanus orientalis*, *Parasa sinica* on, in China, **449**; *Lithocolletis platani* on, in Turkey, **219**.
- Platyacus ruralis*, on cacao in New Guinea Territory, **544**.

- Platycampus laricis*, on larch in Idaho, 599.
- Platycampus laricivorus*, on larch in Idaho, 599.
- Platycampus ovatus*, bionomics of, on larch in Germany, 216, 217, 218.
- Platycampus pectoralis*, bionomics of, on larch in Germany, 216, 217, 218.
- Platycheirus scutatus* (predacious on Aphids), bionomics of, in Britain, 628, 629; morphology and anatomy of, 628.
- Platyedra gossypiella* (Pink Cotton Bollworm), in Brazil, 22, 86; in Belgian Congo, 572; in Cyprus, 270; in India, 575, 576; in Korea, 381; in Manchuria, 340; in Nyasaland, 126; in Philippines, 183; in Siam, 50; compulsory fumigation of cottonseed against, in Sicily, 174; in Sudan, 572; in Tanganyika, 492; in U.S.A., 53-55, 381; organisation of control of, in U.S.A., 242; in W. Indies, 221, 222, 223, 271, 503, 660; factors affecting penetration of bolls by, 223; survival of, in cotton residues, 223; alternative food-plants of, 572, 577, 661; resting stage in larvae of, 184, 223, 272, 572, 573; other bionomics of, 184, 572; parasites and biological control of, 86, 184, 381, 503, 575; suitable laboratory host of *Microbracon greeni*, 129; other measures against, 53-55, 174, 184, 223, 272, 381, 576, 661; X-rays for detecting, in cotton seeds, 147; effect of soil treatment with sodium selenate on infestation by, 221.
- Platygaster* (parasitising Cecidomyiids), in Holland, 269; in India, 577; in Italy, 296.
- Platygaster oscus*, bionomics of, in Italy, 5.
- Platygaster tuberosula*, parasite of wheat gall-midges in Holland, 269.
- Platygenia barbata*, bionomics of, on oil palm in Dahomey, 348.
- Platygenia quadrimaculata*, bionomics of, on oil palm in Dahomey, 348.
- platyhyphenae*, *Euplectrus*.
- Platylabus*, parasite of *Erannis* in Crete, 172.
- Platynychus formosanus* (see *Cardiophorus*).
- Platyptilia acanthodactyla*, new parasite of, in California, 133.
- Platyptilia pusillidactyla*, of no value in checking *Lantana* in India, 612.
- Platypus biformis*, treatment of pine timber against, in India, 612.
- Platysystrophus* (see *Arrhenodes*).
- Platytelenomus hylas*, parasite of *Sesamia cretica* in Sudan, 574.
- plebeja*, *Atreides*.
- Plecoptera reflexa*, parasites of, on *Dalbergia sissoo* in India, 612.
- Plesiocoris rugicollis*, tests of new winter washes against, on apple in Britain, 236, 237.
- pleurostigma*, *Ceuthorrhynchus*.
- Pleurotropis*, parasite of *Galerucella nymphaeae* in Italy, 3; parasite of *Apanteles congregatus* in Tennessee, 254.
- Pleurotropis amyntas*, parasite and hyperparasite of *Phytomyza ilicis* in Britain, 669.
- Pleurotropis parvulus* (parasite of *Promecotheca* spp.), in Java, 366; distribution and utilisation of, in Pacific Islands, 366, 641; methods of distinguishing sexes of, 366.
- plicatrix*, *Dasyneura*.
- plicatus*, *Rhytidoderes*.
- Plodia interpunctella*, in Britain, 154; in Germany, 230; in Italy, 172, 198; in Japan, 360; in Korea, 225; in dried fruit and nuts, 154, 225, 230; in other stored products, 154, 172, 198, 225, 360; bionomics of, 173, 198, 225, 230; measures against, 154, 173, 225, 360, 361; summary of data on, 198.
- Plum, *Timocratica haywardi* on, in Argentina, 188; pests of, in Australia, 21, 292; pests of, in Baluchistan, 51, 577; pests of, in Britain, 236, 332, 333, 396; pests of, in Cyprus, 270, 271; pests of, in Czechoslovakia, 468; *Hoplocampa minuta* on, in Denmark, 117; pests of, in France, 622, 689; pests of, in Germany, 46, 114, 297, 398, 633; Aphids on, in Hungary, 458; pests of, in India, 503, 577; pests of, in Italy, 4, 97, 98; *Monema flavescens* on, in Japan, 207; *Monosteira uncostata* on, in Morocco, 359; *Parasa latistriga* on, in S. Rhodesia, 125; Coccids on, in Russian Union, 316, 474, 552, 680; *Cydia funebrana* on, in Switzerland, 336; pests of, in

- U.S.A., **288, 429**; reduced importance of *Lecanium corni* on, in Central Europe, **690**; spray programme for, **396**; oil sprays causing injury to, **6, 430**; quassia sprays harmless to, **98**.
- Plum Curculio (see *Conotrachelus nenuphar*).
- Plum Sawflies (see *Hoplocampa flava* and *H. minuta*).
- Plum Tortricid (see *Cydia funebrana*).
- Plusia brassicae*, on cabbage in U.S.A., **250, 370, 379**; measures against, **370, 379, 380**.
- Plusia californica*, on tomato in California, **431**; confused with *Heliothis armigera*, **431**.
- Plusia chalcites*, on cabbage and tomato in Fiji, **641**.
- Plusia orichalcea*, measures against, on flax in Bengal, **577**.
- Plusia signata*, tests of insecticides against, on tobacco in Sumatra, **17**.
- Plutella cruciferarum* (see *P. maculipennis*).
- Plutella maculipennis* (on crucifers), in Britain, **262**; in Fiji, **641**; in India, **129, 575, 576**; in Jamaica, **239**; in Louisiana, **250, 370**; in New South Wales, **545**; in New Zealand, **262, 545**; in S. Rhodesia, **125**; in Russian Union, **307, 439**; bionomics of, **262**; *Microbracon greeni* reared on, **129**; parasites and biological control of, **262, 505, 545, 575, 576**; experiments with bacilli against, **307**; dusting against, **370**.
- plutellae*, *Apanteles*.
- pluto*, *Pimpla*.
- plutus*, *Pantorhytes*.
- Poa*, *Pediculopsis graminum* on, in Russian Union, **151**.
- Poa pratensis*, relation of Pentatomid cereal pests to, in Germany, **631**; *Pyrausta nubilalis* experimentally fed on, **229**.
- podana*, *Tortrix* (*Cacoecia*).
- Podisma mikado* (see *Miramella*).
- Podisma pedestris*, in Siberia, **320**.
- Podisma sapporensis*, in Japan, **618**.
- Poecilocerus pictus*, plants attacked by, in India, **577**.
- Poecilonota festiva*, bionomics of, on cypresses in Turkey, **218, 219**.
- Poeciloscytus cognatus*, on *Taraxacum kok-saghyz* in Kazakstan, **45**.
- Poecilus* (see *Pterostichus*).
- Poinciana*, pests of, in W. Indies, **181, 464**.
- Poinsettia*, *Pemphigus* on, in greenhouse in Oklahoma, **257**.
- Poison Hemlock (see *Conium maculatum*).
- Poland, *Piesma* and leaf-crinkle of beet in, **105, 163, 350-352**; utilisation of *Beauveria* against *Piesma* in, **105**; forest pests in, **232, 350, 398, 401, 438, 670, 676**; orchard pests in, **162, 163, 350, 675, 694**; pests of stored grain in, **162, 220, 350**; miscellaneous pests in, **162, 350, 403**; locusts in, **9, 403**; *Melolontha* spp. in, **9, 676**; beneficial insects in, **232, 438, 671, 677**; utilisation of *Aphelinus mali* in, **162**.
- Polia legitima*, on tobacco in Connecticut, **178**.
- Polistes*, predacious on *Monema flavescens* in Japan, **207**; predacious on *Crocidolomia binotalis* in Seychelles, **336**.
- Polistes crinitus* var. *americanus*, predacious on *Laphygma frugiperda* in Porto Rico, **503**.
- Polistes major*, predacious on *Laphygma frugiperda* in Porto Rico, **503**.
- Polistes metricus*, predacious on *Protoparce sexta* in Florida, **251**.
- politana*, *Eulia*; *Paraphoranthia*.
- politus*, *Chilocorus*.
- Pollard (see Bran).
- Polyblastus stenocentrus*, parasite of spruce sawflies in Czechoslovakia, **518**.
- Polyblastus tener*, parasite of spruce sawflies in Czechoslovakia, **518**.
- Polycaon stouti*, in furniture in U.S.A., **499**.
- Polychloropentane, against termites, **422**.
- Polychrosis botrana* (Vine Moth), in Cyprus, **270**; in France, **155**; in Germany, **102, 111, 458, 465, 496, 582, 689**; in Yugoslavia, **494**; in Palestine, **191**; in Russian Union, **403**; in Sicily, **516**; susceptibility of varieties of vines to, **191**; on plums, **270**; bionomics of, **111, 155, 191, 466, 494, 496, 516**; breeding of, for testing insecticides, **111**; sprays against pupae of, **103, 689**; dusts and sprays against larvae of, **191, 516**; timing of sprays against, **155**; baits for, **465, 494, 496, 582**; banding against, **458**; use of females for trapping males of, **466, 582**.

- Polychrosis viteana* (Grape Berry Moth), measures against, in U.S.A., 377.
- polygonata*, *Pulvinaria*.
- polygoni-yonai*, *Myzus*.
- Polygonum*, new Aphid on, in Japan, 104; *Tanymecus palliatus* on, in Ukraine, 322; insecticides tested on, 425, 532.
- Polygraphus gracilis*, Nitidulid predacious on, on *Picea glehni* in Japan, 339.
- Polygraphus proximus*, Nitidulid predacious on, on *Abies sachalinensis* in Japan, 339.
- Polyhedral Disease, affecting parasitism of *Lymantria monacha* by *Phorocera silvestris* in Germany, 582; in wheat gall-midges in Holland, 268.
- Polyodaspis endogena*, sp. n., parasite of *Cydia leucostoma* in Java, 94.
- Polyphylla fullo*, measures against, in forests in Germany, 521, 522; on vines in Russian Union, 403.
- Polyphylla olivieri*, on vines in Russian Union, 403.
- polytomum*, *Diprion*.
- Pomegranate, pests of, in Baluchistan, 51, 577; pests of, in India, 128, 385.
- pometaria*, *Alsophila*.
- pomi*, *Aphis*.
- pomonella*, *Cydia* (*Carpocapsa*, *Laspeyresia*); *Rhagoletis*.
- pomonellae*, *Stomatoceras* (*Anthrocephalus*).
- pomorum*, *Anthonomus*.
- Poncirus trifoliata*, *Papilio xuthus* on, in China, 360.
- ponderosae*, *Dendroctonus*.
- Pontania* (see *Nematus*).
- Popillia japonica* (Japanese Beetle), risk of introduction of, into Bermuda, 85, 86; in U.S.A., 84, 104, 138, 139, 165, 180, 377, 532; legislation against, in U.S.A., 274, 591; on fruit trees and elm, 532, 533; damaging lawns, 533; growth of larvae of, in different media, 336; parasites and biological control of, 84, 165, 377, 533; influence of instars of, on *Tiphia popilliavora*, 84; intestinal protozoa of larvae of, 392; infection of, with milky disease, 377; other measures against, 104, 138, 139, 274, 532, 533, 591.
- popilliavora*, *Tiphia*.
- Poplar (*Populus*), pests of, in Britain, 563, 627; *Alsophila pometaria* on, in Canada, 663; *Ceresa bubalus* on, in France, 689; pests of, in Germany, 398, 401; pests of, in Morocco, 196, 359; *Aspidiotus slavonicus* on, in Uzbekistan, 474; *Lachnosterna implicita* on, in Wisconsin, 32.
- Poplar, Black (see *Populus nigra*).
- Poppy, *Ceuthorrhynchus maculata* on, in Czechoslovakia, 468, 469, 470.
- Poppy Weevil (see *Ceuthorrhynchus maculata*).
- Popular Names, of Arthropods, lists of, 437, 512.
- Population Studies, of insects, 27, 80, 84, 98, 105, 131, 138, 140, 153, 161, 175, 258, 320, 330, 387, 388, 393, 489, 492, 531, 537; theoretical basis of, 145-147.
- populi*, *Smerinthus*.
- populicaulis*, *Pemphigus*.
- populitransversus*, *Pemphigus*.
- populnea*, *Saperda*.
- Populus* (see Poplar).
- Populus nigra*, Lepidoptera on, in Morocco, 196.
- Populus tremula*, pests of, in Germany, 400; dinitro-orthocresol causing injury to, 400.
- Populus tremuloides*, pests of, in U.S.A., 528, 599.
- Porotermes*, in Australia, 545.
- portentosus*, *Brachytrypes*.
- Porthesia dispar* (see *Lymantria*).
- Porthesia similis* (see *Arctornis chrysorrhoea*).
- Porthetria* (see *Lymantria*).
- Porto Rico, pests of bamboos in, 423, 501; maize pests in, 328, 501, 503; miscellaneous pests in, 434-436, 501-503; sugar-cane pests in, 382, 424, 435, 502, 505, 657; termites in, 464, 465; annual insect population records in, 141; beneficial insects and biological control in, 85, 382, 423, 424, 434, 435, 502, 503, 505, 657; introduction of beneficial insects into other countries from, 24, 658, 660, 670; *Bufo marinus* introduced into Florida from, 657; pests from, intercepted in U.S.A., 462.
- Portugal, locusts in, 479; pests of lupins and *Ornithopus* in, 495.
- Portulaca grandiflora*, *Rhizococcus kondonis* on, in Japan, 617.
- posterana*, *Phalonia*.

- postfasciatus*, *Euscapes*.
postvittana, *Tortrix*.
- Potassium Ammonium Seleno-Sulphide, inadvisable for use against mites on *Citrus*, 460.
- Potassium Antimony Tartrate (see Tartar Emetic).
- Potassium Cyanide, spraying with, against locusts, 477; soil treatment with, against *Naupactus leucoloma*, 260.
- Potassium Fluoride, tests of, in baits for grasshoppers, 134.
- Potassium Fluosilicate, spraying with, against Criocerid on rice, 441.
- Potassium Metabisulphite, reducing fermentation in baits for *Dacus*, 98.
- Potassium Thiocarbonate, causing injury to azalea, 605.
- Potato, pests of, in Australia, 90, 186, 226, 389; *Leptinotarsa decemlineata* on, in Belgium, 106, 583; *Phthorimaea operculella* on, in Brazil, 289; pests of, in Britain, 96, 97, 122, 236, 332, 562, 563; pests of, in Canada, 67, 176; pests of, in Czechoslovakia, 469; *L. decemlineata* on, in France, 106, 169, 194, 349, 350, 357, 583, 584, 634, 675; pests of, in Germany, 48, 100, 106, 156, 157, 158, 160, 267, 301, 333, 398, 512, 583, 633, 634, 636, 686, 687; pests of, in Hawaii, 367; pests of, in Holland, 62, 106, 157, 269, 563, 578, 583; *Megymenum gracilicorne* on, in Japan, 441; *L. decemlineata* on, in Luxemburg, 106, 583; *Epilachna vigintioctomaculata* on, in Manchuria and Korea, 340, 362; *Myzus persicae* on, in S. Rhodesia, 125; pests of, in Russian Union, 302, 303, 311, 679; *L. decemlineata* on, in Switzerland, 160, 350, 583; pests of, in U.S.A., 53, 70, 71, 83, 84, 134, 177, 342, 372, 378, 379, 408, 418, 421, 500, 563, 651; *Ceresa bubalus* reared on, 390; experiments with strains and hybrids of, in relation to *L. decemlineata*, 107, 158, 193, 357, 358; susceptibility of varieties of, to other pests, 303, 389; types of injury to, by Psyllids, 176, 636, 651; insects and virus diseases in, 83, 125, 157, 236, 267, 301, 302, 303, 333, 546, 563, 578, 633, 634, 636, 686, 687; sprays to destroy, when infected with virus diseases, 333; calcium cyanamide injuring wet foliage of, 159; (tubers), restrictions on importation of, into Britain, 355, 356; Coleopterous fauna in stores of, in Finland, 392; *Phthorimaea operculella* in imported, in Germany, 583; legislation dealing with fumigation of, against *Popillia japonica* in U.S.A., 274; as bait for wireworms, 656, 683.
- Potato Aphis (see *Macrosiphum solanifolii*).
- Potato Beetle, Colorado (see *Leptinotarsa decemlineata*).
- Potato Leafhopper (see *Empoasca fabae*).
- Potato Moth (see *Phthorimaea operculella*).
- praeceps*, *Scolytus*.
- praecox*, *Lycophotia*.
- praelonga*, *Orthezia*.
- praetiosa*, *Bryobia*.
- praetor*, *Rhogas*.
- Praon simulans*, parasite of *Macrosiphum onobrychis* in U.S.A., 30.
- prasina*, *Palomena*.
- pratensis*, *Lygus*.
- Prays citri*, on *Citrus* in Philippines, 452.
- Prays oleellus* (Olive Moth), baits for, in Italy, 98.
- Prenolepis longicornis* (see *Paratrechina*).
- Prepodes similis* var. *amabilis*, natural enemies of, on *Citrus* in Jamaica, 239.
- Prepodes vittatus*, natural enemies of, on *Citrus* in Jamaica, 239.
- priapus*, *Microphanurus*.
- Prickly-Pear (see *Opuntia*).
- prima*, *Heteroschema* (see *H. rugosopunctata*).
- Primula*, Jassid on, in greenhouses in Britain, 115.
- Priobium carpini* (see *Trypopitys*).
- Prionus californicus*, in bridge timber in U.S.A., 499.
- Priophorus pallipes* (*padi*, auct.), bionomics of, on cherry, etc., in Germany, 114.
- Pristiphora abietina*, on spruce in Czechoslovakia, 469, 517; Syrphid experimentally predacious on, in Germany, 334; in Switzerland, 518; parasites of, 518.
- Pristiphora erichsoni* (on larch), bionomics of, in Germany, 216; in Michigan, 461; utilisation of *Mesoleius tenthredinis* against,

- in Quebec, **464**; maps showing distribution of, in Europe and N. America, **216**; birds and mice destroying, **217**; measures against, **217, 461**.
- Pristiphora laricis* (on larch), in Czechoslovakia, **469**; in Germany, **7, 216, 217, 218**; bionomics of, **217**.
- Pristiphora pallida* (*stecki*), characters and synonymy of, **518**.
- Pristiphora subarctica*, status and characters of, **518**.
- Pristiphora wesmali*, on larch in Germany, **7, 216, 217**; bionomics and control of, **217**.
- Pristomerus*, introduced into U.S.A. from Korea against *Platyedra gossypiella*, **381**.
- Pristomerus ocellatus*, parasite of *Cydia molesta* in U.S.A., **377**.
- Pristomerus testaceicollis*, of little value against *Holcocera pulvereana* in India, **129**.
- Pristomerus vulnerator*, parasite of *Cydia pomonella* in Holland, **579**.
- Probits, for expressing toxicity of insecticides, etc., **66, 243, 309**.
- processionea*, *Thaumetopoea*.
- Prochiloneurus*, key to species of, **40**.
- Prochiloneurus clavatus*, sp. n., parasite of *Pseudococcus* spp. in E. Africa and Natal, **40**.
- Prociophilus konoii*, migrating to *Picea* from *Lonicera* in Japan, **211**.
- Prociophilus oriens*, migrating to *Abies* from *Fraxinus* and *Syringa* in Japan, **211**.
- proclia*, *Aphytis*.
- Procris ampelophaga* (see *Theresimima*).
- Prodenia eridania* (see *Xylomyges*).
- Prodenia litura*, on cabbage and tomato in Fiji, **641**; on tobacco in Japan, **210**; on cacao in New Guinea Territory, **544**; on cotton in Philippines, **184**; on tobacco in Sumatra, **17**; derris dust ineffective against, **17, 184**.
- Prodenia ornithogalli*, baits for, on lucerne in Illinois, **67**; on peas in Porto Rico, **501**.
- profana*, *Mictis*.
- prolongata*, *Xiphydria*.
- Promargarodes sinensis*, gen. et sp. n., in China, **48**.
- Promecotheca* (on coconut), distribution of *Pleurotropis parvulus* against species of, in Pacific Islands, **366, 641**; new parasites of, in New Guinea Territory, **294, 506**.
- Promecotheca cumingi*, on coconut in Philippines, **451**.
- Promecotheca opacicollis*, on coconut in New Hebrides, **366**.
- Promecotheca papuana*, on coconut in New Britain, **366, 506**; new parasite of, **506**.
- Promecotheca reichei*, value of *Pleurotropis parvulus* against, on coconut and *Metroxylon* in Fiji, **366**; in Tonga, **366**.
- promecothecae*, *Eurytoma*.
- Prontaspis citri*, measures against, on *Citrus* in Argentina, **23**.
- pronuba*, *Agrotis*.
- pronubana*, *Tortrix*.
- Prophanurus alecto* (see *Telenomus*).
- Prorhinotermes inopinatus*, in damp wood in Fiji, **641**.
- Prorops nasuta*, utilisation of, against *Stephanoderes hampei* in Brazil, **238**; in Uganda, **238**.
- Prosoestus* spp., bionomics of, on oil palm in Dahomey, **348**.
- prosopidis*, *Heterospilus*.
- Prosopis spicigera*, **505**.
- Prospaltella*, parasite of *Aspidiotus chinensis* in Japan, **617**.
- Prospaltella aurantii*, parasite of *Lepidosaphes gloveri* in Transcaucasia, **149**.
- Prospaltella berlesae*, establishment of, against *Aulacaspis pentagona* in Brazil, **34, 87**.
- Prospaltella perniciosi*, parasite of *Aspidiotus perniciosus* in Argentina, **24**.
- prostratus*, *Phloeosinus*.
- Protargionia larreae*, bionomics and control of, in Argentina, **23, 24**.
- Protease Protein, and sucrose, *Dacus ferrugineus tryoni* experimentally fed on, **345**.
- Protoparce*, measures against, on tobacco and tomato in U.S.A., **252, 380, 431, 432**.
- Protoparce quinque maculata*, on tobacco, etc., in U.S.A., **178, 252, 253, 431**; bionomics of, **252**; natural enemies and disease of, **178, 253**; characters of, **252**.
- Protoparce sexta*, on tobacco and tomato in U.S.A., **178, 251, 252, 253, 431**; bionomics of, **251, 252**; natural enemies and disease of, **178, 251, 253**; characters of, **252**.
- Protoparce sexta paphus*, parasite of, **253**.
- protoparcis*, *Sturmia*.
- protospirae*, *Pemphigus*.

- protuberans*, *Dendrosoter*.
proximum, *Trypodendron*.
proximus, *Nematus* (*Pontania*).
pruinoseum, *Lecanium*.
prunastri, *Lecanium* (*Sphaerolecanium*).
 Prune, *Bryobia praetiosa* on, in New South Wales, 57; *Taeniothrips inconsequens* on, in Oregon, 377, 498.
 Prune Thrips (see *Taeniothrips inconsequens*).
pruni, *Illiberis*.
pruniella, *Coleophora*.
prunifoliae, *Rhopalosiphum*.
prunivora, *Enarmonia*.
prunorum, *Aspidiotus*; *Diptilomyces*; *Phenacaspis*.
Prunus avium, pests of, in Germany, 156, 297.
Prunus emarginata, *Hadrobregmus gibbicollis* on, in Oregon, 499.
Prunus mume, weevil on, in Japan, 556.
Prunus spinosa, *Ceresa bubalus* on, in France, 689; *Tibicen haematodes* on, in Germany, 46; Coccids on, in Uzbekistan, 474.
psallidis, *Erythmelus*.
Psallus seriatus (Cotton Fleahopper), in U.S.A., 244, 245, 380, 538; overwintering on *Croton*, 245, 538; relation of wind to spread of, 245; Mymarid parasites of, 381, 538; dusting against, 244, 245, 380; methods of trapping, 245.
psammaula, *Decadarchis*.
psarae, *Microgaster*.
Pseudaulacaspis pentagona (see *Aulacaspis*).
Pseudiasata brasiliensis, predacious on *Pseudococcus brevipes* in Brazil, 23.
pseudobrassicae, *Rhopalosiphum*.
pseudococcina, *Hambletonia*.
Pseudococcus, distribution and utilisation of parasites of, in Africa, 40, 503, 665; measures against, on apple in Br. Columbia, 66; ant associated with, on coconut in Mauritius, 611; classification of, 224.
Pseudococcus adonidum, possibly on vines in S. Australia, 164; in greenhouses in Japan, 616; on *Citrus* in New Zealand, 277; parasites of, 598; *P. citriculus* mistaken for, 616; measures against, 164, 278.
Pseudococcus boninsis, measures against, on sugar-cane in Florida, 657.
Pseudococcus brevipes, in Brazil, 23; in Hawaii, 502; in Mauritius, 611; in Porto Rico, 502; on date palm and *Cyperus*, 23; on pineapple, 502, 611; natural enemies and biological control of, 23, 502.
Pseudococcus citri, in S. Africa, 40, 323, 503; in Egypt, 509; in Florida, 256, 259; in France, 266; altitude affecting primary food-plant of, in Java, 161; in Kenya, 666; in Russian Union, 403; on *Citrus*, 256, 259, 266, 323; on coffee, 161, 666; other food-plants of, 161, 259, 403, 509; natural enemies and biological control of, 40, 266, 323, 503, 598; ants hindering biological control of, 323; partial immunity from *Coccophagus gurneyi* in, 598; other measures against, 161, 509; tests of thiocyanate spray against, 259.
Pseudococcus citriculus, on *Citrus* in Japan, 616.
Pseudococcus filamentosus, new parasite of, in Natal, 40.
Pseudococcus furcatispinus, sp. n., on graminaceous plants in Caucasus, 680.
Pseudococcus gahani, in Russian Union, 150, 589; on *Citrus*, 150; utilisation of *Cryptolaemus montrouzieri* against, 589; reactions of, to parasites, 598; fumigation against, 150.
Pseudococcus kazanskyi, sp. n., on *Agropyrum* in Caucasus, 680.
Pseudococcus kenya, on coffee in Kenya, 39, 665; in Uganda, 503; natural enemies and biological control of, 39, 503, 665; differences between *P. lilacinus* and, 665.
Pseudococcus lilacinus, natural enemies of, introduced into Kenya from other countries against *P. kenya*, 665; differences between *P. kenya* and, 665.
Pseudococcus longispinus (see *P. adonidum*).
Pseudococcus maritimus, measures against, on *Citrus* in New Zealand, 277, 278; resistance to certain parasites in, 598.
Pseudococcus perniciosus, new parasites of, on coffee in Tanganyika, 40.
Pseudococcus virgatus (see *Ferrisiana*).

- pseudomagnoliarum*, *Coccus*.
Pseudomicromelus australia, synonymy of, 434.
Pseudoparlatoria ostreata, measures against, on papaya in Porto Rico, 435.
Pseudophonus griseus (see *Harpalus*).
Pseudophonus pubescens (see *Harpalus rufipes*).
pseudosolani, *Aulacorthum* (*Myzus*) (see *Macrosiphum solani*).
pseudospretella, *Borkhausenia*.
Pseudotsuga, restrictions on importation of, into Britain, 356.
Pseudotsuga taxifolia (*mucronata*), pests of, in Germany, 230, 522; pests of, in U.S.A., 67, 324, 499, 599; insect fauna of, in northern Rocky Mountains, 67; insecticides causing injury to, 530; Coleoptera in timber of, 499.
pseudotsugae, *Dendroctonus*.
psidii, *Dacus* (*Chaetodacus*).
Psidium, new Tineid on, in Argentina, 188.
Psidium guayava (see Guava).
Psila rosae (on carrot), in Czechoslovakia, 468; bionomics and control of, in Massachusetts, 496.
Psilocephala rufiventris, predacious on *Horistonotus uhleri* in S. Carolina, 500.
Psilura monacha (see *Lymantria*).
Psocids, measures against, damaging papers and foodstuffs in Germany, 102; infesting house insulation material in U.S.A., 640.
Psylla costalis, bionomics and control of, on apple in Switzerland, 232; characters of, 232.
Psylla mali, on potato in Germany, 636; on apple in Nova Scotia, 662; on apple in Switzerland, 232; measures and tests of insecticides against, 232, 332, 662; characters of, 232.
Psylla peregrina, on potato in Germany, 636.
Psylla pyri, on pear in Rumania, 357.
Psylla pyricola (on pear), bionomics of, in Italy, 115; in New York, 535; in Rumania, 357; measures against, 115, 535.
Psylla pyrisuga, on pear in Rumania, 357.
Psyllia (see *Psylla*).
Psyllid Yellows, caused by *Paratrioza cockerelli* on potato and tomato, 72, 176, 651.
Psyllids, of Alberta, 175; trapped by leaves of tomato in Germany, 113.
Psylliodes angusticollis, on tobacco in Japan, 210.
Psylliodes attenuata, on hops in Britain, 333; measures against, on hemp in Ukraine, 322.
Psylliodes chrysocephala, measures against, on rape in Holland, 269.
Pterocarpus angolensis, Bostrychid in timber of, in S. Africa, 60.
Pterochlorus tropicalis (see *Lachnus*).
Pteromalus alboannulatus (see *Dirhicnus*).
Pteromalus gelechia (see *Dibrachys cavus*).
Pteromalus klugi (*nematicida*) (see *Tritneptis*).
Pteronidea ribesii (see *Nematus*).
Pteronus pini (see *Diprion*).
Pterostichus chalcites, predacious on *Lachnosterna* in Wisconsin, 423.
Pterostichus cupreus, measures against, on strawberry in Germany, 457.
Pterostichus vulgaris, measures against, on strawberry in Germany, 457.
Ptinus japonicus, bionomics of, in Japan, 445.
Ptinus tectus, damaging building timber in Germany, 7.
Ptychomyia remota, parasite of *Levuana iridescens* in Fiji, 212.
Ptychomyia selecta, parasite of *Pristiphora wesmaeli* in Germany, 217; parasite of *Pikonema alaskensis* in Maine, 540.
pubescens, *Ophonus* (*Pseudophonus*) (see *Harpalus rufipes*).
pudibunda, *Dasychira*.
pudicus, *Carpocoris*.
puera, *Hyblaea*.
pugnax, *Solubea*.
pulchricornis, *Meteorus*.
pullus, *Anagyrus*.
pulsatorium, *Trogium*.
pulverea, *Holococera*.
pulverulenta, *Monima* (see *M. cruda*).
Pulvinaria, utilisation of *Cryptolaemus montrouzieri* against certain species of, in Russian Union, 454, 455, 589.
Pulvinaria aurantii, on *Citrus* in Transcaucasia, 150, 454; fumigation against, 150.
Pulvinaria betulae, measures against, on vines in Germany, 103.
Pulvinaria floccifera, on tea in Abkhazia, 455.

- Pulvinaria polygonata*, bionomics of, on *Citrus* and *Murraya* in Formosa, 557.
- Pumpkin, pests of, in Fiji, 641 ;
Megymenum gracilicorne on, in Japan, 441.
- punctatum*, *Anobium*.
- punctatus*, *Dendrolimus*.
- punctiferalis*, *Dichocrocis*.
- punctiger*, *Ceuthorrhynchus* ; *Isostasius*.
- punctillum*, *Stethorus*.
- punctiventris*, *Cleonus* (*Bothynoderes*).
- punctulata*, *Pheidole*.
- punctulatus*, *Cratosomus*.
- punicae*, *Paratetranychus*.
- punicaeella*, *Euzophera*.
- Punjab, *Bemisia gossypiperda* on cotton in, 560 ; fruit pests in, 503 ; new *Pyralid* on sugar-cane in, 456.
- pupivora*, *Trichospilus*.
- purchasi*, *Icerya*.
- purgatus*, *Encicospilus*.
- purpurascens*, *Bothriophryne*.
- purpureae*, *Nematus* (*Pontania*).
- pusilla*, *Oscinella* frit.
- pusillidactyla*, *Platyptilia*.
- pusillus*, *Corynetes*.
- putaminana*, *Cydia pomonella*.
- putrescentiae*, *Tyrophagus*.
- Pyarmon* *cribata*, bionomics of, on *Coleus parviflora* in Madras, 129.
- Pygaera pigra*, on poplar and willow in Morocco, 196.
- pygmaea*, *Leptispa*.
- pygmaeus*, *Cephus* ; *Microbracon*.
- pyloalis*, *Margaronia*.
- Pyrameis* (see *Vanessa*).
- pyrastris*, *Lasiophthicus* (*Catabomba*, *Scaeva*).
- Pyrausta aurata meridionalis*, bionomics and control of, on mint in Morocco, 193.
- Pyrausta inaequalis*, new parasite of, in California, 133.
- Pyrausta nubilalis* (European Corn Borer), in Britain, 116, 295 ; in Italy, 174, 198, 199, 295 ; in Japan, 556 ; in Manchuria, 340, 361 ; in Ontario, 25-27 ; in Philippines, 452 ; in Russian Union, 109, 146, 148, 152, 228-230, 587, 589 ; in U.S.A., 80, 138, 179, 180, 381, 414, 456, 645, 656 ; geographical distribution of, 229 ; on *Artemisia vulgaris*, 116, 295 ; on hemp, 229 ; on ramie, 587 ; on sorghum, 198, 199, 295, 340 ; on wheat, 361, 556 ; on willow, 152 ; bionomics and physiology of, 25-27, 80, 146, 148, 228, 230, 296, 327, 414 ; parasites and biological control of, 80, 109, 174, 296, 381, 589, 656 ; fumigation of broom corn under winter conditions against, in Canada, 416 ; other measures against. 138, 179, 199, 296.
- Pyrausta penitalis*, adaptation of *Chelonus annulipes* to, 80.
- Pyrausta phoenicealis*, bionomics of, on *Perilla* in Japan, 210.
- Pyrausta subsequalis* (see *P. inaequalis*).
- Pyrethrins, content of, in pyrethrum dusts and sprays, 249, 281, 380, 412, 417, 418, 537, 593, 620, 663 ; contents and evaluation of, in pyrethrum flowers, 134, 135, 392 ; effect of aqueous extraction on content of, in pyrethrum, 135.
- Pyrethrum (including extracts), against Acridids, 618 ; against Aphids, 395, 450, 536 ; against Jassids, 53, 115, 281, 412, 501, 537 ; against other Rhynchota, 24, 417, 449, 463, 471, 543, 562, 667 ; against Coleoptera, 155, 156, 158, 188, 247, 249, 298, 342, 373, 380, 450, 623, 634 ; against Diptera, 297, 380, 497 ; against Lepidoptera, 28, 191, 154, 199, 207, 213, 310, 370, 376, 380, 400, 418, 431, 435, 449, 450, 521, 592, 614, 620, 663, 664, 689 ; against mites, 310, 536 ; against sawflies, 400 ; against thrips, 71, 525 ; uses of, against pests of stored products, 154, 188, 380, 521 ; tests of toxicity of, to insects, 144, 249, 277, 373, 620, 689 ; action of, on honey bees, 231, 402 ; effect of, as a stomach poison, 231, 310 ; inactivation of, after ingestion by *Xylomyges*, 524 ; dusting with, 24, 53, 155, 156, 158, 213, 247, 249, 281, 298, 370, 373, 376, 380, 400, 417, 418, 431, 449, 463, 471, 537, 543, 634, 662, 667 ; carriers for, 213, 249, 380, 449, 463, 537, 634 ; formulae for, in sprays, 310, 412, 663 ; preparation of extracts of, 135, 136, 310, 450 ; effect of aqueous extraction on, 135 ; effect of addition of chloropicrin to dusts of, 471 ; and derris, 155, 156, 158, 298, 471, 634 ; and lauryl thiocyanate, 413 ; and lead arsenate, 28, 536, 663 ; and lime-sulphur, 536 ; and nicotine,

- 449; and oil emulsions, 28, 376, 450, 689; atomised sprays of oils containing, 412; and soap, 71, 199, 207, 310, 501, 618, 620; and sodium carbonate, 449; and sulphur, 213, 247, 417, 418, 431, 463, 537; and tar distillates, 298, 689; and tobacco, 667; effect of storage on, 310; evaluation of, 134, 135, 136, 392; survey of data on, 104; other insecticides compared with, 155, 298, 380, 451, 536, 663.
- Pyrethrum* Plants, *Thrips tabaci* on, in Kenya, 666.
- pyri*, *Anthonomus* (see *A. piri*); *Dasyneura* (*Perrisia*); *Eriophyes*; *Phyllobius*; *Psylla*; *Stephanitis* (*Tingis*).
- pyricola*, *Psylla*.
- Pyridine, spray containing, against *Contarinia nasturtii*, 514.
- Pyrilla*, measures against, on sugarcane in India, 576.
- pyrina*, *Zeuzera*.
- pyrisuga*, *Psylla*.
- pyrivora*, *Contarinia*.
- Pyroline M.P., composition and use of, against whiteflies, 530; and deris, 530.
- Pyrophorus luminosus*, introduced into Barbados and Mauritius from Porto Rico against *Lachnosterna smithi*, 660, 670; predacious on *Prepodes* spp. in Jamaica, 239; technique for transporting, 670.
- Pyrosis idiota*, on oaks in China, 360.
- pyrrhaspis*, *Pexopsis*.
- Pyrrhia umbra*, on soy beans in Manchuria, 340.
- Pyrus sinensis* (Sand Pear), Lepidoptera on, in China, etc., 667-669.
- Q.**
- quadratum*, *Piesma*.
- quadratus*, *Stenocranophilus*.
- quadridentata*, *Ascogaster*.
- quadrigibbus*, *Tachypterellus*.
- quadriguttatus*, *Luperodes*.
- quadrilineatus*, *Opsimus*.
- quadrinaculata*, *Ceratia* (*Aulacophora*); *Platygenia* (*Clastocnemis*); *Temnoschoita* (see *T. quadripustulata*).
- quadrinaculatus*, *Bruchus* (*Callosobruchus*) (see *B. maculatus*); *Collops*.
- quadripes*, *Xylotrechus*.
- quadripunctatus*, *Thanatophilus* (*Xylodrepa*).
- quadripustulata*, *Winthemia*; *Exochomus*.
- Quarantine, pests intercepted in: in Germany, 298; in aeroplanes in Hawaii, 368; in Japan, 50, 208, 568; in Russian Union, 439; in U.S.A., 462.
- Quassia, spraying with, against *Hoplocampa* spp., 46, 97, 117, 197, 297; against *Hyalopteris arundinis*, 98; effect of, on Lepidoptera, 98, 197, 298; harmless to foliage and bees, 98; preparation of sprays of, 97, 298; keeping quality of, 46.
- Quebec, forest pests in, 275, 276, 463; orchard pests in, 664; fumigation of broom corn against *Pyrausta nubilalis* in, 416; beneficial insects and biological control in, 276, 464, 601.
- Queensland, cotton pests in, 281, 602; *Scirtothrips signipennis* in, 329; sugar-cane pests in, 87, 88, 185, 186, 187; tomato pests in, 187, 281, 603; vine pests in, 89, 365, 602; miscellaneous pests in, 89, 186, 602; book on pests and their control in, 87; insects and virus diseases in, 87, 186, 448; beneficial insects and biological control of insects and plants in, 57, 185, 186, 263, 294, 345, 546, 602, 603.
- Queensland Fruit Fly (see *Dacus ferrugineus tryoni*).
- Quercus* (see Oak).
- Quercus ilex*, new Coccid on, in France and Corsica, 235.
- Quercus mongolica*, *Eutetrappa metallescens* on, in Russian Far East, 42.
- quercus*, *Kuwania*.
- Quince, *Cydia pomonella* on, in Algeria, 192; *Typhlocyba froggatti* on, in S. Australia, 292; Lepidoptera on, in Baluchistan, 51; *Cantharis obscura* destroying flowers of, in France, 622; Lepidoptera on, in Italy, 4, 629, 630; *Monosteira unicostata* on, in Morocco, 359; Coccids on, in Uzbekistan, 474.
- quindecimpunctata*, *Anatis*.
- quinquefasciatus*, auct. *Culex* (see *C. fatigans*).
- quinquemaculata*, *Protoparce*.
- quinguesignata*, *Hippodamia*.

R.

radicum, *Hylemyia* (Paregle).

Radish, *Phytoecia coerulea* on, in Azerbaijan, 320; *Athalia rosae* on, in Denmark, 117; *Hylemyia radicum* on, in Morocco, 605; (dried), *Plodia interpunctella* in, in Korea, 225.

raffrayi, *Coptotermes*.

Ragwort (see *Senecio jacobaea*).

Ragwort Seed-fly (see *Hylemyia seneciella*).

Rainfall, relations of locusts and grasshoppers to, 12, 13, 14, 92, 93, 94, 178, 214, 291, 388, 393, 394, 427, 481, 484, 485, 487, 545, 553, 557, 559, 602; relations of other insects to, 16, 39, 85, 136, 182, 215, 216, 222, 226, 229, 238, 281, 327, 351, 386, 428, 435, 436, 447, 454, 457, 502, 550, 551, 588, 613, 664, 665, 677; effects of, on deposits and toxicity of sprays, 241, 249, 272.

Raisins, as food for *Pleurotropis parvulus*, 641. (See Fruit, Dried.)

Rajputana, locusts in, 559, 560.

Ramie (see *Boehmeria nivea*).

ramulorum, *Myrmelachista ambigua rapae*, *Pieris* (*Ascia*).

Rape, *Epicometis hirta* on, in Czechoslovakia, 468; *Meligethes aeneus* on, in Germany, 511; *Psylliodes chrysocephala* on, in Holland, 269; *Athalia rosae* on, in Siberia, 313.

Rape Beetle (see *Meligethes aeneus*).

Rape Sawfly (see *Athalia rosae*).

Raspberry, *Amphorophora rubi* on, in Britain, 333; *Carposina adreptella* on, in New Zealand, 37; pests of, in U.S.A., 139, 178, 380; *Parlatoria oleae* on, in Uzbekistan, 474; variety of, resistant to *A. rubi*, 280; *Dasyneura plicatrix* on, 673.

Raspberry Fruitworm (see *Bythurus unicolor*).

réaumurii, *Patchiella*.

rectirostris, *Anthonomus*.

recurvalis, *Hymenia*.

Recurvaria piceaella, measures against, on *Picea abies* in New York, 529.

Red Bud (see *Cercis canadensis*).

Red-legged Earth Mite (see *Halotydeus destructor*).

Red-top Grass (see *Agrostis vulgaris*).
redenbacheri, *Phlugiola*.

Redwood-bark Flour, as carrier for

dinitro-o-cyclohexylphenol dusts, 261, 650.

reflexa, *Plecoptera*.

regalis, *Paranthrene* (*Sciapteron*).

reichei, *Promecotheca*.

remota, *Ptychomyia*.

remotus, Hill, *Coptotermes*.

remotus, Silv., *Coptotermes* (see *C. formosanus*).

remulus, *Trichacis*.

renipustulatus, *Chilocorus*.

repandus, *Calotermes*.

Resin, and sodium carbonate in sprays, 278, 279, 560; in repellent paint against pests of books, 366.

Resin Residue, as adhesive and spreader for sprays, 28, 241, 532.

Resin Soap (see Soap, Resin).

Reticulitermes hesperus, in building timber in U.S.A., 499.

reuteri, *Drepanothrips*.

Revena nitida, infesting seeds of *Cocos* spp. in Brazil, 661.

reversa, *Sarcophaga*.

Reviews:—Appel (O.) Ed. (in Sorauer, P.), Plant Protection, 290; Bondar (G.), Insect Pests and Parasites of Cacao in Bahia, 662; Borkhsenius (N. S.), Coccidae of Quarantine Value for U.S.S.R. and their Allied Species, 58; Burr (M.), The Insect Legion, 455; Buzin (N.), Printz (Ya.), Lazarevskii (M.), Negrul' (A.) & Katz (Ya.), Viticulture, 403; Couch (J. N.), The Genus *Septobasidium*, 242; Esaki (T.), Hori (H.) & Yasumatsu (K.), Insectorum Japonicorum illustratio iconographia coloribus ad naturam depicta, 446; Fishkis (I. S.), Mateev (V. A.) and Morozov (A. A.), Naphthalene and its Application in the Control of Granary Mites in Beet-growing Farms, 686; Frickhinger (H. W.), Elements of Pest Control, 606; Graham (S. A.), Principles of Forest Entomology, 2nd edn., 527; Hartnack (H.), 202 Common Household pests of North America, 382; Hopkins (A. D.), Bioclimatics, 325; Hunter (L.), Domestic Pests . . . , 237; Kemper (H.), The Pests of Stored Products . . . and their Control, 513; Metcalf (C. L.) & Flint (W. P.), Destructive and Useful Insects, 2nd edn., 655; Osborn (H.), Meadow and Pasture Insects, 527; Pape (H.), The Practice

- of Control of Diseases and Pests of Ornamental Plants, 3rd edn., **437**; Takahashi (T.) & Tsumagari (H.), Manual of Tobacco Insects of Japan, **210**; Thompson (W. R.), Some Beneficial Insects, 4th edn., **436**; Veitch (R.), Insect Pests and their Control, **87**; Weber (H.), An Outline of Entomology, **170**; Whelan (D. B.), Field Crop Entomology, **600**; Wigglesworth (V. B.), The Principles of Insect Physiology, **436**; Pests and Diseases of Sugar-beet, **439**; A Handbook of Philippine Agriculture, **667**.
- Rhabdocnemis obscura* (on sugar-cane), in Hawaii, **90, 367**; effect of trashing against, in Queensland, **185, 187**; susceptibility of varieties of sugar-cane to, **186, 367**; migrations of, **367**; parasite of, **90, 367**; tests of traps for, **90**.
- Rhabdophaga saliciperda*, bionomics and morphology of, on willow and poplar in Britain, **627, 628**; measures against, **628**.
- Rhaconotus*, parasite of *Scirpophaga* spp. in Mysore, **291**; key to Indian species of, **506**.
- Rhaconotus cleantes*, sp. n., parasite of *Pemphres affinis* in India, **505**.
- Rhaconotus menippus*, sp. n., hosts of, in India, **506**.
- Rhaconotus menippus* var. *africanus*, n., in S. Africa, **506**.
- Rhagoletis cerasi* (Cherry Fruit-fly), measures against, in Germany, **297**; intercepted in Russian Union, **439**.
- Rhagoletis pomonella* (in apples), fumigation against, in Canada, **542**; intercepted in Russian Union, **439**.
- rhamni*, *Aphis* (*Doralis*).
- Rhamnus* spp., Aphids on, in Holland and Germany, **578, 686**.
- Rhaphidopalpa similis* (see *Ceratia*).
- rhinoceros*, *Oryctes*.
- Rhinocola aceris*, on potato in Germany, **636**.
- Rhinotermes*, in Australia, **545**.
- Rhizoecus kondonis*, bionomics and control of, on *Citrus*, etc., in Japan, **617**.
- Rhizoglyphus echinopus*, heat treatment of lily bulbs against, in Japan, **617**.
- Rhizoglyphus hyacinthi*, measures against, on *Lilium longiflorum* in U.S.A., **419**; in Japan, **419**.
- Rhizopertha dominica*, damaging pith helmets in India, **612**; in stored rice in Japan, **360**; measures against, **360, 612**.
- Rhizophagus* spp., predacious on bark-beetles in Japan and Sakhalin, **339**.
- Rhizophora*, timber of, practically immune from termites in Porto Rico, **465**.
- Rhizopus*, infesting chestnuts in France, **358**.
- Rhizotrogus solstitialis* (see *Amphimallus*).
- Rhodanates (see Thiocyanates).
- Rhode Island, work of Division of Entomology in, **180**.
- Rhodesia, Northern, cotton pests in, **222, 492**; locusts in, **483, 484**.
- Rhodesia, Southern, *Citrus* pests in, **14, 15, 16**; cotton pests in, **222, 491, 492**; pests of *Dolichos lablab* in, **124, 488, 489, 491**; maize pests in, **124, 491, 492**; miscellaneous pests in, **125**; locusts and grasshoppers in, **124, 125, 637**; insects transmitting virus diseases of tobacco in, **124, 125, 226**; beneficial insects in, **16, 567**.
- rhodesiaensis*, *Bemisia*.
- Rhodesina parasitica*, gen. et sp. n., parasite of *Busseola fusca* in S. Rhodesia, **567**.
- rhododendri*, *Giardomyia*; *Stephanitis*.
- Rhododendron*, pests of, in Britain, **295**; susceptibility of species of, to *Arthrochlamys spilota* in Japan, **212**; new Cecidomyiid on, in New York, **499**. (See *Azalea*.)
- Rhododendron sinense*, preparation of insecticide from, **450**.
- rhodophaga*, *Neocerata*.
- Rhogas*, parasite of *Malacosoma fragilis* in Colorado, **528**.
- Rhogas dendrolimi* (parasite of *Dendrolimus spectabilis*), parasites of, in Japan, **211**.
- Rhogas praetor*, parasite of *Smerinthus planus* in Japan, **624**.
- Rhogas testaceus*, parasite of Lepidoptera in Poland, **438**.
- Rhopalosiphoninus latysiphon*, on potato in Holland, **578**.
- Rhopalosiphoninus staphyleae* (*tulipaela*), not transmitting disease of tulips in Oregon, **369**.
- Rhopalosiphum graminum* (see *Toxoptera*).

- Rhopalosiphum maidis* (see *Aphis*).
Rhopalosiphum melliferum (see *Hyadaphis sii*).
Rhopalosiphum prunifoliae, measures against, on apple in Britain, **333**; causing white ear in wheat in Russian Union, **680**; possible race of, on wheat in U.S.A., **542**.
Rhopalosiphum pseudobrassicae, on crucifers in Louisiana, **254, 371**; application of mathematics to study of, **254**; measures against, **371**.
Rhopalosiphum rufomaculatum, not experimentally transmitting lettuce mosaic in Britain, **671**.
Rhopalosiphum splendens, on wheat in Kansas, **542**.
Rhotonon, **592**.
Rhubarb, Anthomyiid on, in Holland, **269**.
Rhus javanica var. *roxburghi*, Aphids producing tannin galls on, in Formosa, **205**.
Rhyacionia buoliana (Pine Shoot Moth), olfactory responses of parasites of, to *Pinus sylvestris* in Britain, **391**; parasites and biological control of, in Connecticut, **73, 74, 176, 177**; in Czechoslovakia, **469**; bionomics of, **73, 74**; sprays against, **177**.
Rhyacionia turionana, on *Pinus sylvestris* in Czechoslovakia, **469**.
Rhynchophytoptus ficifoliae, gen. et sp. n., on *Ficus* in California, **288**.
Rhynchaenus, synonymy of, **595**.
Rhynchaenus pallicornis, nomenclature of, **595**.
Rhynchites aequatus (on fruit trees), in Britain, **333**; bionomics and control of, in Germany, **156**.
Rhynchites auratus, bionomics and control of, on fruit trees in Germany, **156**.
Rhynchites auratus ferganensis, tests of insecticides on, in Uzbekistan, **627**.
Rhynchites bacchus, bionomics and control of, on apple in Germany, **156**.
Rhynchites betulae, bionomics and control of, on vines and fruit trees in Germany, **156**.
Rhynchites bicolor, systematic position of, **595**.
Rhynchites coeruleus, bionomics and control of, on fruit trees, etc., in Germany, **155, 156**.
Rhynchites cupreus, on fruit trees and vines in Germany, **155**; bionomics and control of weevil identified as, on *Prunus mume* in Japan, **556**.
Rhynchites heros, measures against, on pear in China, **450**.
Rhynchites pauxillus, on fruit trees and vines in Germany, **155**.
Rhynchocoris longirostris, on *Citrus* in Philippines, **452**.
Rhynchophorus palmarum, bionomics of, on coconut in Brazil, **22**.
Rhynchophorus phoenicis, bionomics and control of, on oil palms in Dahomey, **347, 348**.
Rhyncolus culinaris, investigations on, in building timber in Russia, **321**.
Rhyparida spp., on cacao in New Guinea Territory, **544**.
Rhyssa persuasoria (parasite of *Sirex*), ecology of, in Britain, **504**; establishment of, in New Zealand, **504**; destroying *Ibalia leucospoides*, **504**.
Rhythmonotus takagii, parasite of *Dendrolimus spectabilis* in Japan, **211**; parasites of, **211**.
Rhytidodera simulans, bionomics of, on mango in Netherlands Indies, **227**.
Rhytidoderes plicatus, bionomics and control of, on crucifers in France, **458, 459, 621**; in Corsica and N. Africa, **459**.
Ribes, species of *Aphis* infesting, **596**. (See Currant and Gooseberry.)
Ribes alpinum, new Aphid on, in Germany, **100**.
Ribes gracile, *Aphis ribis* on, in Missouri, **597**.
ribesii, *Nematus* (*Pteronidea*); *Syrphus*.
ribicola, *Dasyneura*; *Macrosiphum*.
ribiensis, *Aphis*.
ribi-gillettei, *Aphis*.
ribis, *Aphis*; *Capitophorus* (*Cryptomyzus*); *Eriophyes*.
Rice, pests of, in China, **451, 613**; *Cirphis unipuncta* on, in Fiji, **213, 641**; *Spodoptera mauritia* on, in Formosa, **363**; *Chilo simplex* on, in Hawaii, **367**; pests of, in India, **291, 577**; pests of, in Japan, **207, 209, 225, 362, 440, 441, 555, 556, 619, 620**; pests of, in Korea, **557, 618**; Hispids on, in Madagascar, **664**; pests of, in Manchuria, **340**; pests of, in Philippines, **451, 452**; *Aethemenes chloris* on, in Sierra Leone, **271**; *Solubea pugnax* on, in U.S.A., **537**; susceptibility of varieties

- of, to *Chlorops oryzae*, 555 ;
Nephotettix transmitting dwarf
disease of, 362.
- Rice (Stored), pests of, and their
control, 120, 225, 248, 339, 360,
378 ; nutritive value of forms of,
for *Ephestia* and *Calandra*, 64 ;
(milled), types of bags for pro-
tecting, from pests, 248.
- Rice Borer (see *Chilo simplex*).
- Rice Caseworm (see *Nymphula
depunctalis*).
- Rice Stem Maggot (see *Chlorops
oryzae*).
- Rice Stink Bug (see *Solubea pugnax*).
- Rice Weevil (see *Calandra oryzae*).
- Rice Weevil, Dicky (see *Maleu-
terpes spinipes*).
- Ricinus communis* (see Castor).
- rimac*, *Ipobracon*.
- rimosalis*, *Evergestis*.
- riparius*, *Hypnoidus* (*Cryptohyphus*).
- ripperti*, *Eutermes* (*Nasutitermes*).
- Robinia*, pests of, in Russian Union,
152, 216, 474.
- roborator*, *Pimpla*.
- robusta*, *Cantheconidea* ; *Hypsipyla*.
- robustus*, *Kakothrips* (see *K. pisi-
vorus*).
- Rock Phosphate, and arsenic, dust-
ing with, against *Laphygma
exempta*, 368.
- Rocky Mountain Locust (see
Melanoplus mexicanus).
- Rodolia cardinalis* (predacious on
Icerya purchasi), in Argentina,
23 ; in Formosa, 446 ; utilisation
of, in Japan, 445 ; introduced
into Mauritius from S. Africa
against *I. seychellarum*, 611 ;
liberation of, in Porto Rico, 434 ;
establishment of, in Russian
Union, 589 ; attacking *Palaeo-
coccus*, 434.
- rodriguezensis*, *Campsomeris*.
- Romalea microptera*, ecology of,
damaging narcissus in U.S.A.,
654.
- rosa*, *Ceratitis*.
- rosaceana*, *Tortrix* (*Cacoecia*).
- rosae*, *Aphidius* ; *Athalia* ; *Macro-
siphum* ; *Palaeococcus* (*Crypti-
cerya*) ; *Psila*.
- Rose (*Rosa*), new Coccid on, in
Bulgaria, 402 ; *Mictis profana* on,
in Fiji, 641 ; *Cantharis obscura*
on, in France, 623 ; Aphids on,
in Hungary, 458 ; *Neosyrista
similis* on, in Japan, 210 ;
Macrosiphum rosae on, in Tas-
mania, 21 ; pests of, in U.S.A.,
141, 142, 429, 600 ; species of
- Macrosiphum* overwintering on,
472, 563, 686 ; insecticides
causing injury to, 272, 458.
- Rose Midge (see *Neocerata rhodo-
phaga*).
- Rose Sawfly (see *Neosyrista similis*).
- rosea*, *Chondacris* ; *Monolepta*.
- Rosette Disease (see Virus Diseases).
- roseus*, *Anuraphis*.
- rossi*, *Chrysomphalus*.
- rostrata*, *Aelia*.
- Rotenone, 593 ; dusting with, 32,
194, 250, 325, 376, 380, 461, 623 ;
carriers for, 32, 250, 325, 623 ;
spraying with, 32, 55, 71, 194,
380, 460, 592, 623 ; and oil
emulsions, 55, 460 ; and soap,
71, 194 ; action of, on honey
bees, 402 ; effect of ingestion of,
by insects, 241 ; contents of, in
derris (*q. v.*), 17, 30, 69, 70, 179,
184, 249, 250, 251, 269, 289, 294,
365, 370, 371, 373, 380, 402,
417, 426, 493, 497, 498, 523, 530,
537, 642 ; contents of, in cubé,
30, 71, 177, 179, 250, 286, 426,
498, 530 ; in *Tephrosia*, 250, 251,
502 ; methods of isolating and
determining, 224, 294, 347, 392,
493, 502 ; review of literature on,
224 ; other insecticides compared
with, 78, 250, 380.
- Rotiboellia exaltata*, *Aethemenes
chloris* not observed on, in
Sierra Leone, 271.
- rotundatum*, *Gymnosoma*.
- rubea*, *Scolia*.
- rubeo*, *Cremastus*.
- rubi*, *Amphorophora* ; *Anthonomus*.
- rubiellum*, *Macrosiphum*.
- rubiginosa*, *Lachnosterna* (*Phyllo-
phaga*).
- rubra*, *Kuwania*.
- rubrocinctus*, *Selenothrips*.
- Rubus*, *Dasyneura plicatrix* confined
to, 673 ; primary food-plant of
Macrosiphum avenae, 472. (See
Blackberry, Dewberry and Rasp-
berry.)
- Rubus australis*, probably original
food-plant of *Carposina adrep-
tella* in New Zealand, 37.
- rufa*, *Formica*.
- ruficollis*, *Agrilus* ; *Dysdercus* ;
Necrobia ; *Pimpla*.
- ruficornis*, *Aphanistes* ; *Harpalus*
(see *H. rufipes*) ; *Phytomyza*
(see *P. rufipes*).
- rufifemur*, *Eulimneria*.
- rufimana*, *Phytoecia* (see *P. coeru-
lea*).
- rufimanus*, *Bruchus*.

- rufipes*, *Angitia*; *Harpalus*;
Hylastes (*Hylurgopinus*); *Necro-*
bia; *Pentatomia*; *Phytomyza*.
rufiscutellaris, *Glypta*.
rufiventris, *Psilocephala*.
rufocuprea, *Anomala*.
rufomaculatum, *Rhopalosiphum*.
ruforum, *Achrysocharella* (*Tetra-*
campe).
rufus, *Aptinothrips*; *Lophyrus* (see
Diprion sertifer).
rugiceps, *Euethela*.
rugicollis, *Plesiocoris*.
rugosa, *Lachnosterna* (*Phyllophaga*);
Oxyglypta.
rugosopunctata, *Heteroschema*.
rugostriatus, *Otiorrhynchus*.
rugulosum, *Lecanium*.
rugulosus, *Scolytus*.
Rum Puncheons, *Xyleborus badius*
damaging, in transit to England
from Br. Guiana, 328, 524.
Rumania, orchard pests in, 357,
690; pests of pines in, 355;
list of Tachinids in, 608; sum-
mary of plant quarantines in,
592.
Rumex, Aphids on, in Britain, 673,
674.
rumicis, *Aphis*.
ruralis, *Platyacus*; *Voria*.
Russia (U.S.S.R.), beet pests in,
306, 321, 322, 407, 439, 677, 678,
684; cereal pests in, 109, 145,
148, 152, 229, 311, 315, 322, 453,
454, 554, 587; Coccids on *Citrus*
in, 148, 149, 150, 454; cotton
pests in, 43, 147, 150, 215, 304,
313, 314, 552, 677, 680; pests of
crucifers in, 109, 152, 306, 307,
310, 316, 320, 439, 455, 589;
pests of cucurbits in, 152, 310;
Pediculopsis graminum on grasses
in, 151; flea-beetles on hemp and
flax in, 322, 684; pests of legu-
minous plants in, 108, 150, 152,
305, 322, 454, 474, 475, 568, 681,
683; *Lymantria dispar* on oak in,
456; orchard pests in, 43, 109,
303, 304, 305, 315, 316, 455, 588,
589, 680, 681, 683; pests of
ramie in, 587; pests of rubber-
producing plants in, 43, 44, 45,
679; pests of vines in, 42, 43,
403, 683; *Pyrausta nubilalis* on
willow in, 152; pests of stored
cereals and seeds in, 147, 304,
312, 318, 319, 440, 551, 585, 685,
686; Coleoptera in building
timber in, 321, 322; new Coccids
in, 680; book on Coccids subject
to quarantines in, 58; key to
fruit-flies intercepted in, 439;
locusts and grasshoppers in,
109, 146, 147, 160, 321, 386, 553;
Opatrum spp. in, 41, 321;
(Crimea), injurious Thysanoptera
of, 43; factors affecting distribu-
tion and outbreaks of important
pests in, 145-147, 228, 230, 454;
insects and virus diseases of
potato and beet in, 302, 303, 439;
beneficial insects and biological
control in, 109, 148, 149, 215, 303,
304, 305, 316, 319, 320, 453, 454,
455, 551, 555, 587, 588-590;
experiments with bacteria and
fungi against pests in, 306, 307,
308, 455, 684; difficulty of
establishing *Aniheraea pernyi* in,
403, 586; food of toads, etc., in,
407; review of literature on
economic entomology in, 214.
(See Siberia and Asia, Central.)
Russian Far East, *Aspidiotus perni-*
ciosus in, 315; cereal pests in,
230, 454; Lamiids and Scolytids
in, 42, 456; Coccinellid intro-
duced into Caucasus from, against
A. perniciosus, 303.
rustica, *Cantharis*; *Dexia*.
rutella, *Setomorpha*.
Rye, pests of, in Czechoslovakia,
468, 469; *Oscinella frit* on, in
Denmark, 117; pests of, in
Germany, 63, 352, 353, 519, 631;
Blissus leucopterus on, in
Illinois, 284; *Calliptamus italicus*
damaging, in Poland, 9; *Chloro-*
pisca notata on, in Japan, 556;
pests of, in Russian Union, 311,
312, 554, 680; *Mayetiola des-*
tructor not developing on, 691;
types of injury to, by Penta-
tomids, 352, 353; insects and
white ear in, 680.
Rye (Stored), pests in, and their
control, 64, 119, 173, 220, 305,
318, 319, 355; (bran), *Attagenus*
pellio in, in Germany, 224.
Rye Beer, as bait for *Theresimima*,
684.
Rye Grass (see *Lolium*).

S.

- sabulosum*, *Opatrum*.
saccharalis, *Diatraea*.
sacchari, *Aphis*.
Saccharine, in baits for locusts, 478.
saccharina, *Lepisma*; *Tomaspis*.
Saccharosydne saccharivora, on
sugar-cane, etc., in Florida and

- Porto Rico, 657; susceptibility of varieties of sugar-cane to, 657; parasites and biological control of, 657.
- sachalinensis*, *Cephaleia*.
- saeuberlichi*, *Systates*.
- Sainfoin (see *Onobrychis sativa*).
- Sainfoin Weevil (see *Tanymecus palliatus*).
- St. Croix, new parasite of *Phthorimaea gudmannella* in, 133.
- St. John's Wort (see *Hypericum perforatum*).
- St. Kitts, biological control of *Diatraea saccharalis* on sugar-cane in, 659, 660.
- St. Lucia, *Leucoptera coffeella* on coffee in, 435; biological control of *Diatraea* spp. on sugar-cane in, 182, 505, 659; *D. lineolata* erroneously recorded in, 182.
- St. Vincent, miscellaneous pests in, 271, 272.
- Saipan (see Japanese Mandated Islands).
- Saissetia coffeae*, bionomics and control of, on *Citrus* in New Zealand, 524.
- Saissetia cuneiformis*, new parasite of, in Eritrea, 503.
- Saissetia nigra*, food-plants of, in Japanese Empire, 445; on grapevines in Queensland, 365.
- Saissetia oleae* (on *Citrus*), in California, 342, 377, 424, 433, 460, 649, 653; new parasites of, in Natal, 40, 503; bionomics of, in New Zealand, 524; on apricot, 649; proposed utilisation of *Diversinervus* against, 424; other measures against, 377, 433, 460, 524, 649; resistance of strains of, to HCN, 342; method for distinguishing dead, 653.
- Saissetia perseae*, new parasite of, in Natal, 503.
- Saissetia persimilis*, new parasites of, in S. Africa, 40.
- saliciperda*, *Rhabdophaga*.
- saliciperdae*, *Eurytoma*.
- salicis*, *Stilpnotia*.
- salignae*, *Aphidius*.
- salignus*, *Lachnus* (*Tuberolachnus*).
- Salt (Sodium Chloride), ineffective against *Cantharis obscura*, 623; in baits for cutworms, 390; as repellent for *Melolontha*, 299; and sand, use of, against *Oryctes*, 347; tea bushes injured by wash containing, 340; effects of, on removal of spray residues from apples, 189, 648, 649.
- Sakhalin, Coccids of, 456; forest pests in, 19, 91, 339, 615; beneficial insects in, 91, 339.
- Salix* (see Willow).
- Salix alba* var. *coerulea*, pests and diseases of, in Britain and Holland, 562, 563.
- Salsola pestifer*, relation of *Eutettix tenellus* and curly-top to, in Idaho, 286.
- saltatrix*, *Meromyza*.
- Saltbush (see *Atriplex*).
- salvialis*, *Pagoda*.
- Salvia sclarea*, thrips on, in Crimea, 43.
- Samoa, *Dacus* spp. in, 212, 365; *Oryctes rhinoceros* in, 641; beneficial insects introduced into, 212, 365, 641.
- samsonovi*, *Eurytoma*.
- San José Scale (see *Aspidiotus perniciosus*).
- samborni*, *Aphis*.
- sanctus*, *Microdus* (*Bassus*).
- Sand Pear (see *Pyrus sinensis*).
- Sand Wireworm (see *Horistonotus uhleri*).
- Sandal, *Dacus passiflorae* on seeds of, in Fiji, 366.
- Sandwich Method, for testing toxicity of insecticides, 241, 243, 524.
- sanguinipes*, *Pinthaeus*.
- Santo Domingo (see Dominican Republic).
- Santobane A Emulsifier, 141.
- Saperda* spp., trees attacked by, in Russian Far East, 42, 43.
- Sappocallis ulmicola* (see *Myzocallis*).
- sapporensis*, *Podisma*.
- Sarcocephalus cordatus*, Coleoptera in timber of, in Burma, 693.
- Sarcophaga*, *Dirhinus* reared on, 212; larvae of *Helicobia australis* compared with, 57.
- Sarcophaga aldrichi* (parasitic on *Malacosoma disstria*), bionomics of, in Minnesota, 646.
- Sarcophaga barbata*, parasite of *Vanessa cardui* in Transcaucasia, 587.
- Sarcophaga depressa*, parasite of grasshoppers in Australia, 545.
- Sarcophaga lambens*, parasite of *Protoparce sexta* in Florida, 251.
- Sarcophaga reversa*, parasite of grasshoppers in Illinois, 75.
- Sarcophaga sinuata*, parasite of grasshoppers in Illinois, 75.

- Sarcophagulopsis trigonophymi*, parasite of *Trigonophymus arrogans* in Argentina, 214.
- sarcostega*, *Tortrix* (*Cacoecia*).
- sarothamni*, *Bryobia*.
- Sarothamnus vulgaris*, new mite on, in Holland, 301.
- sasakii*, *Calandra*.
- Saskatchewan, *Loxostege sticticalis* on beet in, 27; miscellaneous pests in, 600; grasshoppers in, 543, 600.
- satellitica*, *Pholus*.
- Satinwood, West Indian (see *Zanthoxylum*).
- satyriniformis*, *Melittia*.
- saucia*, *Peridroma* (*Lycophotia*).
- savagei*, *Neochryopus*.
- Sawfly, Black Wheat-stem (see *Trachelus tabidus*).
- Sawfly, Pine (see *Acantholyda erythrocephala* and *Diprion pini*).
- Sawfly, Plum (see *Hoplocampa flava* and *H. minuta*).
- Sawfly, Rape (see *Athalia rosae*).
- Sawfly, Rose (see *Neosyrista similis*).
- Sawfly, Spruce (see *Diprion polytomum*).
- Sawfly, Wheat Stem (see *Cephus cinctus*).
- Sawfly, Yellow-headed Spruce (see *Pikonema alaskensis*).
- Sawdust, in baits for grasshoppers, 240.
- sayi*, *Chlorochroa*.
- scaber*, *Dendrosoter*.
- Scaeva pyrastris* (see *Lasiophthicus*).
- scalaris*, *Saperda*.
- Scale, Black (see *Saissetia oleae*).
- Scale, Citricola (see *Coccus pseudo-magnoliarum*).
- Scale, Citrus Red (see *Aonidiella aurantii*).
- Scale, Cottony Cushion (see *Icerya purchasi*).
- Scale, Juniper (see *Diaspis visci*).
- Scale, Mussel (see *Lepidosaphes ulmi*).
- Scale, Obscure (see *Chrysomphalus obscurus*).
- Scale, Purple (see *Lepidosaphes beckii*).
- Scale, San José (see *Aspidiotus perniciosus*).
- Scale, Violet (see *Parlatoria oleae*).
- Scale Insects, list of introduced, in Argentina, 87; of Central Asia, 336; of Br. Columbia, 511; of France, 48, 103; records of, in Germany, 223; of Italy, 48, 511; of Madeira 392; book on, subject to quarantines in Russian Union, 58; of S. Sakhalin, 456; physiological factors affecting infestation by, 112, 113; natural enemies of, 15, 19, 21, 23, 24, 25, 34, 40, 87, 126, 128, 129, 212, 266, 270, 290, 294, 303, 304, 308, 316, 323, 335, 345, 349, 366, 367, 385, 424, 434, 437, 446, 454, 455, 471, 501, 502, 503, 506, 546, 558, 575, 589, 611, 617, 665; ants associated with, 323, 363, 611, 665; *Septobasidium* associated with, 242; microtechnique for testing reactions of, to oil insecticides, 143; classification and new species of, 48, 103, 224, 235, 290, 392, 402, 456, 623, 624, 680.
- scamander*, *Papilio*.
- Scapteriscus vicinus*, *Larva americana* introduced into Porto Rico from Brazil against, 85, 435; in other countries, 85.
- Sceptomyza flaveola*, on horse-radish in Germany, 110.
- scarabaeoides*, *Phloeotribus*.
- Scelionids, records of parasitic, in Germany, 352.
- Sceliphron caementarium*, possibly predacious on *Laphygma frugiperda* in Porto Rico, 503.
- Scepticus insularis*, on tobacco in Japan, 210.
- schineri*, *Carpomyia*.
- schioedtei*, *Chilocorus*.
- schistaceana*, *Eucosma*.
- Schistocerca gregaria*, in E. Africa, 478, 482, 570; in N. Africa, 477, 478, 481; in S. and S. W. Africa, 93; in Fr. W. Africa, 481, 487; in Arabia, 480, 481, 482; in Belgian Congo, 476; in India, 291, 484, 485, 599, 560; in Persia, 482; in Spain, 477; in Anglo-Egyptian Sudan, 479, 480; phases of, 48, 477, 481, 482, 484, 486, 487, 603; morphology and pigmentation of, 48, 486; outbreak centres and ecology of, 480, 481, 482, 487; migrations of, 478, 487; effects of temperature, humidity and rainfall on, 291, 480, 481, 487, 603; correlation of outbreaks of, with sun spots, 485; reactions of, to light, 603; effects of deficient diets on, 604; respiration of, 104; micro-organisms infesting, 486; measures against, 477, 478, 481.

- Schistocerca paranensis*, in Argentina, **476, 543**; in Paraguay, **543**; measures against, **476**.
- Schizobremia coffeae*, introduced into Kenya from Tanganyika against *Pseudococcus kenyae*, **665**.
- Schizoneura lanigera* (see *Eriosoma*).
- Schizotetranychus hindustanicus*, on *Citrus* and *Melia* in India, **128**.
- schmutzi*, *Limothrips*.
- schneideri*, *Dasyneura* (see *D. alpestris*).
- Schoenobius bipunctifer* (*incertellus*) (on rice), measures against hibernating, in China, **613**; in India, **577**; in Philippines, **451**; parasites of, **577, 620**.
- schwartzii*, *Anuraphis* (*Appelia*).
- Sciapteron regalis* (see *Paranthrene*).
- Sciara*, transmitting *Phomopsis* on pistachio in Greece, **453**; measures against, on mushrooms in Maryland, **380**.
- sciogama*, *Stenoma*.
- Scirpophaga innotata*, on rice in Philippines, **451**.
- Scirpophaga monostigma*, on sugar-cane in India, **291, 558**; damage caused by, to sugar-cane varieties, **558**; parasites of, **291**.
- Scirpophaga nivella*, on sugar-cane in India; **291, 558, 575**; damage caused by, to sugar-cane varieties, **558, 575**; parasites of, **291**.
- Scirtothrips aurantii*, factors affecting damage to *Citrus* by, in S. Rhodesia, **14**; spray against, **14**.
- Scirtothrips citri* (Citrus Thrips), measures and tests of insecticides against, in U.S.A., **377, 425, 432-434, 460, 649**; bionomics of, **432**; characters distinguishing *Frankliniella moultoni* and, **433**.
- Scirtothrips dorsalis*, type of injury to chillies by, in India, **494**.
- Scirtothrips signipennis* (Banana Rust Thrips), bionomics of, in Queensland, **329**; on *Citrus*, **330**; factors affecting outbreaks of, **329, 330**; measures against, **330**.
- scitella*, *Leucoptera* (*Cemistoma*).
- Sclerodermus*, parasite of *Catorama herbarium* in Fiji, **366**.
- Sclerotinia pseudo-tuberosa*, warm water treatment of chestnuts favouring infestation by, **359**.
- Scolia rubra*, establishment of, against *Lachnosterna smithi* in Mauritius, **611**.
- Scoliopteryx libatrix*, on poplar and willow in Morocco, **196**.
- Scolothrips longicornis*, bionomics of, on soy beans in Crimea, **43**.
- Scolothrips sexmaculatus*, bionomics of, in U.S.A., **410**.
- scolyticida*, *Coeliodes*.
- Scolytids*, classification and new species of, **512, 615**. (See Bark-beetles.)
- scolytivorus*, *Dendrosoter*.
- Scolytus destructor* (see *S. scolytus*).
- Scolytus multistriatus* (on elm), in Britain, **65**; in Holland, **396**; in U.S.A., **68, 190, 378, 529, 599, 644**; factors determining outbreaks of, **397**; effect of sunlight and location on infestation of logs by, **190**; associated with Dutch elm disease, **65, 68, 378, 396, 397, 529**; crotch injury to elm-twigs by, **77, 644**; bionomics of, **65, 396, 397**; measures against, **66, 397, 529**.
- Scolytus praeceps*, on *Abies concolor* in U.S.A., **284, 324**; associated with *Spicaria anomala*, **284**; new Braconid parasite of, **324**.
- Scolytus rugulosus*, measures against, on peach in Illinois, **527**.
- Scolytus scolytus* (on elm), **77**; bionomics of, associated with Dutch elm disease in Britain and Holland, **65, 396, 397**; measures against, **66, 397**.
- Scolytus subscaber*, associated with *Spicaria anomala* on *Abies concolor* in California, **284**.
- Scolytus sulcatus*, bionomics of, on elm, apple, etc., in U.S.A., **77**.
- Scolytus ventralis*, associated with *Trichosporium symbioticum* on *Abies concolor* in California, **284**.
- scolytus*, *Scolytus*.
- Scorodite Ore, tests of, as an insecticide, **313**.
- Scorpion Fly (see *Harpobittacus australis*).
- Scorpions, destroying locusts in S. Africa, **394**.
- Scorzonera tau-saghyz*, pests of, in Russian Union, **44, 679**.
- scorzonerae*, *Xerophilaphis*.
- Scots Pine (see *Pinus sylvestris*).
- scripta*, *Sphaerophoria*.
- scrophulariae*, *Anthrenus*.
- scrupulosa*, *Teleonemia*.
- sculptilis*, *Prosoestus*.
- scutatus*, *Platychirus*.
- scutellaris*, *Apanteles*.
- scutellata*, *Trineptis* (*Coelopisthia*).
- scutellatus*, *Gonipterus*; *Pachynematus*.

- Scutigerella immaculata*, movements of, in soil in California, **411**.
- Scyllina picta*, in Argentina, **476**.
- Scymnodes lividigaster*, introduced into Porto Rico against *Sipha flava*, **382**.
- Scymnus*, introduced into Kenya against *Pseudococcus kenyae*, **665**; predacious on *Tetranychus telarius* in Queensland, **603**.
- Sea-gulls, destroying *Cleonus punctiventris* in Czechoslovakia, **470**.
- Seal Oil, effect of spraying with, on bud development of pear, **94**.
- secalella*, *Tinea*.
- secalis*, *Trachea* (*Apamea*).
- sedecimpunctata*, *Eutetrappa* (*Saperda*).
- Seed-corn Beetle (see *Agonoderus lecontei*).
- Seeds, X-rays for detecting pests in, **147, 440**.
- segetum*, *Agrotis* (*Euxoa*, *Feltia*).
- segregata*, *Tiphia*.
- segregata*, auct. *Parasetigena* (see *Phorocera silvestris*).
- Seius*, predacious on *Paratetranychus pilosus* in Connecticut, **429**.
- Selandria sixi*, reaction of *Trichogramma* to eggs of, **35**.
- Selatosomus* (see *Corymbites*).
- selecta*, *Ptychomyia* (*Bessa*).
- selenaria*, *Boarmia*.
- Selenium, use of sprays containing, inadvisable on *Citrus*, **460**. (See Sodium Selenate.)
- Selenothrips rubrocinctus*, on cacao and mango in W. Indies, **24, 25, 239**; attempted utilisation of *Dasyscapus parvipennis* against, **25, 239**; dusting against, **24**.
- sellatus*, *Xylopsocus*.
- Selocide, **460**.
- Semasia diniana* (see *Enarmonia*).
- semlidis*, *Trichogramma*.
- seminarius*, *Bruchus* (*Bruchidius*).
- semipunctata*, *Lissopimpla*.
- semistriatus*, *Microphanurus* (*Teleonomus*).
- semivelutina*, *Hexamitodera*.
- seneciella*, *Hylemyia*.
- Senecio jacobaeae*, failure to establish *Tyria jacobaeae* against, in Australia, **282**; insects introduced into New Zealand against, **449**.
- Senecio vulgaris*, lettuce mosaic in, in Britain, **671**.
- senegalensis*, *Hyperaspis*.
- seniculum*, *Apion*.
- Senna* (Stored), *Tortilia viatrix* in, in New Jersey, **29**.
- separata*, *Chrysopa oculata*.
- sepia*, *Hylemyia*.
- septemfasciata*, *Nomadacris*.
- septendecim*, *Magiccada*.
- septentrionis*, *Arrhenodes* (see *A. minutus*).
- Septobasidium*, monograph on, associated with Coccids, **242**.
- Sequoia*, restrictions on importation of, into Britain, **356**.
- Sequoia gigantea*, *Phloeosinus bicolor* on, in France, **225**.
- seriatus*, *Dasus* (*Gonocephalum*); *Psallus*.
- sericaridae*, *Sturmia* (*Crossocosmia*).
- sericea*, *Trichispa*.
- sericeus*, *Agriotes*; *Metamasius*.
- serinopa*, *Nephantis*.
- Serradella* (see *Ornithopus*).
- Serratia marcescens*, disease in *Zootermopsis* caused by, in California, **597**.
- serricorne*, *Lasioderma*.
- sertifer*, *Diprion* (*Neodiprion*).
- Sesamia*, on sugar sorghum in Italy, **198**.
- Sesamia cretica*, bionomics of, on maize and sugar sorghum in Italy, **174, 197, 198, 295, 296**; on sorghum in Sudan, **574**; parasites of, **296, 574**; measures against, **296**.
- Sesamia inferens*, measures against, on rice in China, **613**.
- Sesbania*, pests of, in Formosa, **363**.
- Setaria italica*, *Chilo simplex* on, in Manchuria, **340**.
- setariae*, *Carolinaia* (*Hysteroneura*).
- setarius*, *Calomycterus*.
- setiger*, *Lacon*.
- setipennis*, *Bigonicheta*.
- Setomorpha*, nomenclature of species of, in stored tobacco in Netherlands Indies, **50**.
- Setora nitens*, parasites of, on tea in Java, **347**.
- Sexava*, parasites and biological control of, on coconut in New Guinea Territory, **22, 277**; tests of insecticides against, **277**.
- sexdens*, *Atta*.
- sexdentatus*, *Ips*.
- sexmaculatus*, *Scolothrips*; *Tetranychus*.
- sexnotata*, *Macrosteles* (*Cicadula*).
- sexta*, *Protoparce*.
- sexualis*, *Besserioides*.
- seychellarum*, *Icerya*.
- seychellensis*, *Microphanurus*.

- Seychelles, miscellaneous pests and biological control in, **335, 336**.
 Shallot, *Thrips tabaci* on, in Louisiana, **372**.
 Sheep, *Helicobia australis* reared on, in Australia, **57**.
sheldoni, *Eriophyes*.
 Shellac, in repellent paint against pests of books, **366**.
shiraii, *Nurudea*.
Shorea robusta, list of Longicorns attacking, **612**.
 Shortland Islands, attempted introduction of *Liothrips urichi* into, **366**.
Stalis lutaria, in Britain, **390**; unsuitable host for *Trichogramma evanescens*, **36**; natural host of *T. semblidis*, **36, 390**.
 Siam, cotton pests in, **49**.
 Siberia, new Anthomyiid on cereals in, **311**; grain mites in, **312**; locusts in **145, 146, 147, 320**; fungus infesting *Loxostege sticticalis* in, **307**; wireworms in, **678**; key to Acridids of western, **694**.
sibirica, *Aelia*.
sibiricus, *Aeropus* (*Gomphocerus*).
sicarius, *Apanteles*.
 Sicily, Geometrid on *Citrus* in, **630**; Bruchid on lupins in, **201, 495**; miscellaneous pests in, **5, 452, 522**; *Polychrostis botrana* on vines in, **516**; compulsory fumigation of cottonseed against *Platyedra gossypiella* in, **174**; occurrence of males of *Icerya purchasi* in, **5**.
Sida, *Platyedra gossypiella* on, in Sudan, **572**.
sidae, *Dysdercus*.
 Sierra Leone, miscellaneous pests in, **271**; parasite of Syrphids in, **40**.
signata, *Pagria*; *Plusia*.
signatus, *Anthonomus*.
signifera, *Chirida*; *Theresia* (*Paratheresia*) (see *T. claripalpis*).
signipennis, *Scirtothrips*.
Signiphora, parasite of *Protargionia larreae* in Argentina, **24**.
sii, *Hyadaphis*.
 Silica, toxicity of forms of, to *Bruchus obtectus*, **531**.
 Siliceous Earths, reducing volatilisation of nicotine, **133**. (See Bentonite and Lloyd's Reagent.)
 Silicic Acid (dust of), effect of, against *Calandra granaria*, **120, 582**.
 Silk, review of Arthropods injurious to, **224**.
 Silkworm (see *Bombyx mori*).
 Silkworm, Chinese Oak (see *Antheraea pernyi*).
Silvanus fasciatus, measures against, in oil-palm kernels in Dahomey, **349**.
Silvanus surinamensis (see *Oryzaephilus*).
silvaticus, *Tetrastichus*.
silveirai, *Neolecanium*.
silvestris, *Phorocera*.
similis, *Ceratia* (*Rhaphidopalpa*); *Coccophagoides* (*Diaspiniphagus*); *Diprion*; *Microcryptus*; *Neosyrista*; *Porthesia* (see *Arctornis chrysorrhoea*); *Prepodes*; *Tachinomyia*.
simplex, *Anabrus*; *Chilo*; *Dasus* (*Gonocephalum*); *Erromenus*; *Rhizophagus*; *Taeniothrips*.
simulans, *Praon*; *Rhytidodera*.
 Sind, locusts in, **559, 560**.
sinensis, *Ceroplastes*; *Lachnosterna* (*Holotrichia*); *Promargarodes*.
singularis, *Otiorrhynchus*.
sinica, *Parasa*.
Sinoxylon, new parasite of, in India, **505**.
sinuosaria, *Phigalia*.
Sipha flava (on sugar-cane), in Florida, **657**; parasites introduced into Porto Rico against, **382**.
Sipha maydis, on wheat in Central Asia, **453**.
Siphonaphis padi, auct. (see *Rhopalosiphum prunifoliae*).
Sirex, parasites and ecology of, in timber in Britain, **504**; symbiosis of species of, with fungi in Germany, **401**.
Sirex gigas, **401**.
Sirex juvencus, **401**.
Sirex noctilio, **401**; introduction of parasites of, into New Zealand from Britain, **504**.
Sirex phantoma, **401**.
Sirex spectrum, **401**.
Sisymbrium altissimum (see *Norta*).
 Sitka Spruce (see *Picea sitchensis*).
sitkaensis, *Lasius niger*.
Sitodiplosis mosellana (on wheat), increase of, in Br. Columbia, **66**; bionomics and control of, in Holland, **268, 269**.
Sitodrepa panicea, *Catorama herbarium* recorded as, in Fiji, **366**; infesting stuffed lizard in Germany, **8**; natural enemies of, **8, 584**.

- Sitona*, effect of damage to leguminous plants by, 454 ; measures against, 108.
- Sitona callosa*, on lucerne in Russia, 108.
- Sitona crinita*, on leguminous crops in Russia, 151, 454.
- Sitona cylindricollis*, on lucerne in Russia, 108.
- Sitona inops*, on lucerne in Russia, 108.
- Sitona lineata*, on peas and vetches in Russia, 454.
- Sitophilus* (see *Calandra*).
- Sitotroga cerealella*, measures against, in stored products in U.S.A., 172, 341, 451 ; use of eggs of, for rearing *Trichogramma*, 35, 36, 306, 391, 589, 590, 660 ; factors concerned in finding of eggs of, by *T. evanescens*, 166.
- Six-spotted Leafhopper (see *Macrosteles divinus*).
- sixi*, *Selandria*.
- Skunks, destroying *Protoparce* spp. in U.S.A., 251, 253.
- Slag (Porous), tests of, as an insecticide, 313.
- slavonicus*, *Aspidiotus*.
- Slippery Elm (see *Ulmus fulva*).
- Sloe (see *Prunus spinosa*).
- Smartweed (see *Polygonum*).
- Smerinthus ocellatus* var. *atlanticus*, on poplar and willow in Morocco, 196.
- Smerinthus planus*, *Rhogas praetor* parasitic on, in Japan, 624.
- Smerinthus populi*, suitability of, as host for *Trichogramma evanescens*, 35, 36.
- Smerinthus populi* var. *austauti*, on poplar and willow in Morocco, 196.
- smithi*, *Lachnosterna* (*Phytalus*).
- Smoke, use of, against *Sexava* and *Melolontha*, 277, 299.
- Smynthurus viridis* (on clover and lucerne), in W. Australia, 131, 292, 551 ; in New Zealand, 550 ; utilisation of *Biscirus lapidarius* against, 131, 292, 551 ; other measures against, 550.
- Soap, spraying with, 89, 451 ; tests of penetration of solutions of, into tracheae of insects, 579 ; in mixed sprays, 115, 151, 177, 194, 199, 207, 231, 233, 235, 278, 300, 310, 332, 359, 365, 395, 446, 448, 450, 458, 501, 514, 519, 530, 540, 541, 570, 618, 620 ; affecting keeping quality of quassia sprays, 46 ; for emulsifying oils, 45, 333, 353, 525, 530, 535, 566, 626, 642 ; formulae containing, 45, 89, 115, 194, 231, 233, 235, 278, 310, 331, 333, 359, 365, 395, 448, 458, 514, 530, 540, 541, 570, 618, 620.
- Soap, Coconut-oil, in sprays, 71.
- Soap, Fish-oil, in sprays, 128, 498, 560 ; in repellent paint for *Chrysobothris*, 420.
- Soap, Resin, in sprays, 128, 560.
- Soapstone, as carrier for fluorine dusts, 431.
- Society Islands, *Dacus psidii* in, 294. (See Tahiti.)
- Sodium Aluminium Fluoride (see Cryolite).
- Sodium Arsenate, against termites, 422 ; reactions of wireworms to, 28 ; penetration of leaves by, 309. (See Sodium Pyroarsenate.)
- Sodium Arsenite, in baits, 67, 68, 92, 98, 130, 134, 240, 260, 291, 320, 390, 476, 478, 537 ; dusting and spraying with, against locusts, 92, 479 ; soil treatment with, unsatisfactory against *Naupactus leucoloma*, 260 ; against termites, 422 ; reactions of wireworms to, 28 ; tests of toxicity of, to insects, 134, 537, 627 ; formulae containing, 67, 92, 98, 260, 320, 390, 476, 478 ; causing injury to plants, 68, 627.
- Sodium Benzoate, in baits for grasshoppers, 134.
- Sodium Caseinate, dusting sulphur made wettable by, 460.
- Sodium Carbonate, uses of, in sprays, 278, 279, 420, 449, 451, 460 ; interactions of, with other sprays on *Citrus*, 278, 279 ; formulae containing, 278, 449, 560.
- Sodium Chlorate, spraying with, to destroy plants, 333, 375 ; and nicotine, 333.
- Sodium Chloride (see Salt).
- Sodium Cyanide, used for fumigating with hydrocyanic acid (*q. v.*), 29, 174, 260, 357, 440, 508, 637 ; factors affecting reaction between sulphuric acid and, 508.
- Sodium Dinitro-ortho-cresylate, in dormant sprays against orchard pests, 360, 533, 534.
- Sodium Fluoaluminate (see Cryolite).
- Sodium Fluoride, in baits, 32, 249, 321, 322, 510, 537 ; in bait-spray for *Argyresthia*, 232 ; against Blattids, 367 ; tests of toxicity of, to insects, 537, 627.

- Sodium Fluosilicate, in baits, **67, 131, 520, 537, 609, 652**; dusting with, **17, 82, 108, 191, 239, 283, 322, 417, 431, 497**; carriers for, **191, 283, 431**; effect of electric charges and carriers on adhesiveness of dusts of, **309, 310**; use of, against *Rhizopertha* in pith helmets, **612**; tests of toxicity of, to insects, **537, 627**; formulae containing, **17, 67, 131, 283, 431, 520, 609, 652**; and calcium arsenate, **283**; and injury to plants, **191, 309**; other insecticides compared with, **17, 431, 537, 627**.
- Sodium Hydroxide, in formula for "instantaneous" oil emulsions, **627**.
- Sodium Lauryl Sulphate, as a spreader and wetting agent, **33, 377, 642**.
- Sodium Oleate, as a spreader for nicotine, **332**; affecting deposits of oil sprays, **411**.
- Sodium Oleyl Sulphate, as an emulsifier for oils, **642**.
- Sodium Pentachlorophenate, against termites, **422**.
- Sodium Pyroarsenate, in bait for cutworms and grasshoppers, **67**.
- Sodium Selenate, effect of soil treatment with, on cotton and its pests, **220, 221, 222**.
- Sodium Silicate, for removing lead residues from apples, **189, 190**.
- Sodium Tetraborate (see Borax).
- Sogata furcifera* (on rice), in Japan, **362**; in Manchuria, **340**; oviposition of, **362**.
- Soil, sampling of, for pests, **153, 317, 318, 411, 656, 679**; measures for insect control causing depletion of, **342**; regulations dealing with treatment of potting, against pests in U.S.A., **591, 592**; effects of character of: on wireworms, **96, 97, 206, 418, 501, 679, 683**; on other pests, **46, 107, 113, 131, 177, 206, 222, 351, 384, 411, 430, 431, 454, 457, 507, 519, 574, 578, 592, 593, 651, 663**.
- soja*, *Trionymus*.
- sokolowskii*, *Tetrastichus*.
- solanella*, *Lita* (see *Phthorimaea operculella*).
- solani*, *Macrosiphum* (*Aulacorthum*); *Phenacoccus*.
- solanifolii*, *Macrosiphum* (*Illinoia*).
- Solanum*, reactions of *Leptinotarsa decemlineata* to species and hybrids with potato of, **107, 158, 169, 357, 358**; *Phthorimaea operculella* not attacking certain species of, **289**.
- Solanum aethiopicum*, *Helopeltis bergrothi* on, in Sudan, **574**.
- Solanum auriculatum*, *Dacus ferrugineus* on, in Madras, **577**.
- Solanum chacoense*, **107**.
- Solanum demissum*, **107, 169, 357, 358**.
- Solanum dulcamara*, possible reservoir of potato virus diseases in Britain, **236**; preferred food-plant of *Leptinotarsa decemlineata*, **107**.
- Solanum henryi*, **107**.
- Solanum jamesii*, **107**.
- Solanum melongena* (see Egg-plant).
- Solanum nigrum*, *Epilachna vigintioctomaculata* on, in Korea, **362**; *Myzus persicae* on, in S. Rhodesia, **125**; destruction of, against *Phthorimaea operculella* in Victoria, **389**; possible reservoir of diseases of tobacco and potato, **125, 236**.
- Solanum polyadenium*, **107**.
- Solanum triquetrum*, *Paratrioza cockerelli* on, in Texas, **651**.
- Solanum tuberosum* (see Potato).
- Solar Heat, reactions of insects to, **603, 604, 692**; timber, cottonseed, etc., exposed to, against pests, **181, 190, 573, 574, 576, 612**.
- Solar Oil, **627**.
- Solenopsis geminata*, attacking vegetables in Jamaica and Br. Guiana, **239, 524**; predacious on *Nymphula depunctalis* in Philip-pines, **364**.
- solitarius*, *Apanteles*.
- Solomon Islands, attempted introduction of *Liothrips urichi* into, **366**.
- solstitialis*, *Amphimallus* (*Rhizotrogus*).
- Solubea pugnax*, bionomics of, on rice and grasses in U.S.A., **537**.
- sommeri*, *Hypopholis*.
- somnulentella*, *Bedellia*.
- sonchi*, *Macrosiphum*.
- Sonchus*, destruction of, against *Hercothrips fasciatus* in California, **240**; *Phytomyza atricornis* on, in Japan, **444**; pests on, in Russian Union, **44, 677**.
- Sonchus asper*, experimentally infected with lettuce mosaic, **671**.
- Sonchus oleraceus*, insects on, in Britain, **61, 672**.

- Soot, repellent to adults of *Psila rosae*, 497.
- Sooty Moulds, insects associated with, 365, 524, 657; possibly encouraged by sprays containing sugar, 425.
- Sophia* spp., relation of *Eutettix tenellus* and curly-top virus to, in Idaho, 286.
- Sophora japonica*, *Protargionia larreae* on, in Argentina, 23.
- sophorae*, *Brassolis*.
- Sorbus americana*, *Scolytus sulcatus* on, in U.S.A., 77.
- Sorbus aucuparia*, *Erannis* spp. on, in Poland, 438.
- sordidus*, *Acanthocoris*; *Cosmopolites*.
- sorditaria*, *Erannis leucophaearia*.
- Sorghum*, *Nomadacris septemfasciata* associated with, in Africa, 62, 570; pests of, in India, 128, 560; *Pyrausta nubilalis* on, in Manchuria, 340; relation of *Aphis maidis* and, to sugar-cane mosaic in Queensland, 88; *Loxostege sticticalis* on, in Russia, 307; pests of, in Sudan, 572, 574; termites damaging cotton in rotation with, in Tanganyika, 222; pests of, in U.S.A., 248, 261, 274, 341, 374, 376, 381; resistance of varieties of, to pests, 274, 341; use of, in baits for locusts, 478; (broom corn), HCN fumigation of, under winter conditions against *Pyrausta nubilalis* in Canada, 416.
- Sorghum vulgare* var. *saccharatum* (Sugar Sorghum), pests of, in Italy, 197, 198, 199, 295, 472; virus disease of, 472.
- soror*, *Diabrotica*.
- Soxhlet Method, 142.
- Soy Bean, *Scolothrips longicornis* on, in Crimea, 43; pests of, in Japan, 19, 103, 210, 338, 361, 556, 624; *Cydia glycinivorella* on, in Korea, 19; Aphids transmitting virus disease of, in Germany, 686; pests of, in Manchuria, 19, 340; *Ootheca mutabilis* on, in S. Rhodesia, 125; pests of, in U.S.A., 67, 179, 358, 370, 371, 373, 422; susceptibility of varieties of, to *Anomala rufocuprea*, 210; *Bruchus chinensis* seldom developing on, 361; "safened" calcium arsenates injuring, 258; (stored), *Aphomia gularis* in crushed residue of imported, in Germany, 520; *Plodia interpunctella* in, 225.
- Soy-bean Caterpillar (see *Anticarsia gemmatilis*).
- Soy-bean Flour, effect on *Plodia interpunctella* of feeding on, 173; uses of, in sprays and dusts, 70, 208, 373.
- Soy-bean Oil (see Oil, Soy-bean).
- Soy-bean Pod Borer (see *Cydia glycinivorella*).
- Spain, pests of fruit trees in, 6; pests of wild lupins and serratella in, 495; locusts in, 477; danger of spread of *Leptinotarsa decemlineata* into, 583; beneficial insects in, 477, 495; *Aphelinus mali* introduced into Poland from, 162.
- Spalangia cameroni*, parasite of *Dacus* and *Musca* in Fiji, 366.
- Spalangia philippinensis*, parasite of *Dacus ferrugineus* in Madras, 577.
- Sparganothis pilleriana* (on vines), measures against, in Germany, 103; in Russian Union, 403.
- Sparrows, grain mites spread by, 552.
- Spartium junceum*, males of *Icerya purchasi* on, in Sicily, 5.
- Spathius critolarius*, sp. n., parasite of Coleoptera in India, 505.
- Spathius labdacus*, sp. n., parasite of *Pempheres affinis* in India, 505.
- spectabilis*, *Dendrolimus*; *Pimpla (Exeristesoides)*.
- spectrum*, *Sirex (Xeris)*.
- Spelt (see *Triticum spelta*).
- Spermophagus cisti* (see *Bruchus*).
- spermotrophus*, *Megastigmus*.
- Sphaerakus mayri*, parasite of *Bruchus brachialis* in U.S.A., 599.
- Sphaerolecanium* (see *Lecanium*).
- Sphaerophoria flavicauda*, bionomics and morphology of, in Britain, 628, 629.
- Sphaerophoria scripta*, bionomics and morphology of, in Britain, 628, 629.
- Sphecodina abboti*, parasitised by *Apanteles congregatus* in U.S.A., 253.
- Sphecanolestes impressicollis*, predacious on *Rhynchites cupreus* in Japan, 556.
- Sphegigaster flavicornis*, parasite of *Phytomyza ilicis* in Britain, 669; parasitised by *Pleurotropis amyntas*, 670.
- sphenophori*, *Ceromasia*.
- sphenotoma*, *Aeolarchis*.

- Sphinx chersis*, parasite of, in U.S.A., 253.
- Sphinx kalmiae*, parasite of, in U.S.A., 253.
- Sphinx pinastri* (Pine Sphingid), bionomics of, in Poland, 676.
- Spicaria anomala*, *Scolytus* spp. associated with, on *Abies concolor* in California, 284.
- Spicaria fumosorosea*, penetration of chitin of insects by, 307.
- Spicaria heliothis*, sp. n., infesting *Heliothis armigera* in U.S.A., 392.
- Spiders, destroying insects, 251, 282, 288, 338, 374, 500.
- Spilochalcis albifrons*, parasite of *Bedellia somnulentella* in Kansas, 375.
- Spilocryptus adustus*, parasite of *Diprion similis* in Poland, 671.
- Spilonota* (*Eucosma*) *ocellana* (on fruit trees), in Baluchistan, 51, 577; in Canada, 662, 664; in China, 668; in Czechoslovakia, 468; in New York, 535; bionomics of, 51, 668; measures against, 535, 662, 664, 668.
- Spilosoma lubricipeda* (see *Diacrisia*).
- Spilostethus equestris* (see *Lygaeus*).
- spilota*, *Arthrochlamys*.
- spilotus*, *Anthonomus*.
- Spinach, virus disease in, in Britain and Germany, 672, 688; *Hymenia recurvalis* on, in Japan, 441; *Piesma quadratum* and crinkle disease of, in Poland, 163, 351, 352; *Eutettix tenellus* on, in Texas, 594.
- Spinaria bicolor*, parasite of *Setora nitens* in Java, 347.
- spinarum*, *Athalia* (see *A. rosae*).
- spincornis*, *Hoplocerambyx*.
- spinipes*, *Maleuterpes*.
- spinolae*, *Lygus*.
- spinosus*, *Dectes*.
- spiraecola*, *Aphis*.
- splendana*, *Cydia* (*Carpocapsa*, *Laspheyresia*).
- splendens*, *Rhopalosiphum*.
- Spodoptera exempta* (see *Laphygma*).
- Spodoptera mauritia*, measures against, on rice in Assam, 577; parasite of, on sugar-cane, etc., in Formosa, 363.
- sponsor*, *Cryptus*.
- Sprays, types of equipment for applying, 199, 247, 280, 302, 383, 438, 536, 561; method of applying concentrated, 383; use of aircraft for applying, 74, 645; factors affecting deposits of, 52, 143, 272, 411, 412; dusts compared with, 177, 179, 249, 266, 495, 497, 498, 514; aeroplane dusting compared with, 610; programmes for: for orchards in N. America, 104, 534, 623, 662, 664; for *Citrus* in Argentina, 23; for orchard and small fruits in Britain, 396.
- spretus*, *Melanophus* (see *M. mexicanus*).
- Spruce (*Picea*), restrictions on importation of, into Britain, 356; pests of, in Canada, 275, 276, 368, 369, 382, 463, 464, 540, 647; pests of, in Czechoslovakia, 469, 517, 518, 564; pests of, in Germany, 230, 334, 398, 400, 401, 563, 580, 581; *Pissodes* spp. on, in Finland, 8, 9; *Lymantria monacha* on, in Poland, 398; pests of, in Sweden, 122, 123; pests of, in U.S.A., 368, 369, 382, 529, 540, 647; *Acantholyda erythrocephala* not observed on, in U.S.A., 651; symbiosis of Siricids with fungi on, 401; effect of feeding *L. monacha* on, 399; effects of insecticides on, 400, 529, 530.
- Spruce, Black (see *Picea mariana*).
- Spruce, Blue (see *Picea pungens*).
- Spruce, Norway (see *Picea abies*).
- Spruce, Red (see *Picea rubra*).
- Spruce, Sitka (see *Picea sitchensis*).
- Spruce, White (see *Picea glauca*).
- Spruce Budworm (see *Harmoloba fumiferana*).
- Spruce Sawfly (see *Diprion polytomum*).
- Spruce Sawfly, Yellow-headed (see *Pikonema alaskensis*).
- spuria*, *Gossyparia*.
- spurius*, *Apanteles*.
- sputator*, *Agriotes*.
- Squash, *Melittia satyriniformis* on, in Wisconsin, 33.
- Stahlia*, timber of, practically immune from termites in Porto Rico, 465.
- Stantex R and Dispersing Oil, composition and uses of, as insecticides, 530.
- staphyleae*, *Rhopalosiphoninus*.
- Staphylinus caesareus*, predacious on Pentatomids in Germany, 632.
- Staphylinus olens*, predacious on Pentatomids in Germany, 64.
- Staple Fibre, insects damaging, in Japan, 440.
- Starch, *Aleurodes brassicae* fed on media containing, 61.

- Statistical Methods, application of, to entomological problems, **240, 254.**
- Stauroderus scalaris*, in Siberia, **320.**
- Steam, use of, against hibernating larvae of *Cydia* in orchards, **383**; regulations for using, against *Naupactus* in U.S.A., **592.**
- stecki*, *Pristiphora* (*Lygaeonematus*) (see *P. pallida*).
- Stegobium panicea* (see *Sitodrepa*).
- Steirastoma depressum*, on cacao in Grenada, **25.**
- Stellaria media*, *Erythroneura pallidifrons* overwintering on, in greenhouses in Britain, **115**; *Rhizoceros kondonis* on, in Japan, **617**; *Micromyzus oliveri* on, in Washington, **541.**
- Stemtox A, **537.**
- Stenaraeoides octocinctus*, parasite of *Dendrolimus spectabilis* in Japan, **211.**
- Stenobothrus*, in Jugoslavia, **480.**
- Stenobothrus apricarius* (see *Chorithippus*).
- Stenobothrus haemorrhoidalis* (see *Omocestus*).
- stenocentrus*, *Polyblastus*.
- Stenocranophilus quadratus*, parasite of *Saccharosydne saccharivora* in Porto Rico, **657**; suggested introduction of, into Florida, **657.**
- Stenocranus*, on coconut in Seychelles, **335.**
- Stenoma sciogama*, on Anonaceae in Brazil, **566.**
- Stenomalus micans*, parasite of Chloropids in Britain, **562.**
- Stenomalus muscarum*, mass occurrence of, in houses, **201.**
- Stenothrips graminum*, on wheat in Sweden, **121.**
- Stenotus binotatus*, type of injury to wheat by, in New Zealand, **548.**
- Stephanitis pyri*, on fruit trees in Czechoslovakia, **468**; on chestnut in Greece, **452.**
- Stephanitis rhododendri*, on rhododendron in Britain, **295.**
- Stephanoderes hampei* (Coffee Berry Borer), absence of, in Italian E. Africa, **175**; utilisation of *Prorops nasuta* against, in Brazil, **188, 238**; treatment of coffee seed against, in Kenya, **667**; in Uganda, **188.**
- Sterculia*, relation of *Dysdercus* spp. to, in Africa, **489, 490, 573.**
- sternale*, *Trogoderma*.
- Sternochetus* (see *Cryptorrhynchus*).
- Sternophyma fusca* (see *Arcyptera*).
- Stethorus*, predacious on *Paratetranychus pilosus* in Connecticut, **429.**
- Stethorus punctillum*, predacious on *Tetranychus turkestanii* in Central Asia, **626.**
- sticticalis*, *Loxostege*.
- sticticraspis*, *Diatraea* (*Argyria*).
- Stictocephala festina*, bionomics and control of, on leguminous crops in Louisiana, **370, 371.**
- stigma*, *Hemerobius*.
- stigmaterus*, *Microdus* (*Bassus*).
- stigmatias*, *Euxesta*.
- stigmaticus*, *Coeloides*.
- Stilpnotia salicis*, parasites and biological control of, in U.S.A., **499.**
- Stizolobium*, *Aphis* on, in Australia, **448.**
- stokesi*, *Gambrus*.
- Stomatoceras pomonellae*, parasite of *Cydia* spp. in Australia, **293, 640.**
- Stomatodexia diadema*, parasite of *Diatraea* spp. in S. America and Trinidad, **183**; proposed introduction of, into St. Lucia, **183.**
- Stored Products, pests of, in Egypt, **219**; book on pests of, and their control in Germany, **513.**
- stouti*, *Polycaon*.
- stramineus*, *Diversinervus*.
- Strawberry, pests of, in Britain, **97, 395**; spray programme for, in Britain, **396**; *Harpalus rufipes* on, in Denmark, **117**; pests of, in Germany, **155, 457, 466**; *Galerucella distincta* on, in Korea, **619**; *Cerosipha forbesi* on, in Ontario, **276**; *Tarsonemus pallidus* on, in Switzerland, **280**; pests of, in U.S.A., **31, 165, 178, 179, 372, 374, 376, 378, 380, 425, 498**; wheat intersown with, against wireworms, **97**; effects of feeding-punctures of *C. forbesi* on, **276**; Aphids transmitting virus diseases of, **395**; susceptibility of varieties of, to virus diseases, **395.**
- Strawberry Blossom Weevil (see *Anthonomus rubi*).
- Strawberry Leaf-roller (see *Ancyliis comptana*).
- Strawberry Mite (see *Tarsonemus pallidus*).
- Strawberry Root Aphis (see *Cerosipha forbesi*).
- Strawberry Weevil (see *Anthonomus signatus*).
- striatellus*, *Delphacodes*.
- striatum*, *Anobium* (see *A. punctatum*).

- striatus*, *Laevicephalus* (*Deltocephalus*).
- strigator*, *Calyptus*.
- String, made from wood fibre, insects damaging, in Japan, **440**.
- Striped Morning Sphinx (see *Celerio lineata*).
- strobi*, *Chermes* (*Pineus*); *Pissodes*.
- strobilobius*, *Chermes* (*Cnaphalodes*).
- Stromatium*, in timber, **493**.
- Stromatium barbatum*, distribution of, in timber, **465, 611, 612**.
- Stromatium fulvum*, in imported furniture and building timber in U.S.A., **160, 600**; longevity of, **160**.
- Stromatium longicorne*, in furniture in Netherlands Indies, **493**.
- Strophostyles umbellata*, *Chalcodermus aeneus* on, in U.S.A., **77**.
- Strumeta* (see *Dacus*).
- Sturmia*, parasite of *Protoparce* spp. in U.S.A., **253**.
- Sturmia bella*, parasite of *Vanessa cardui* in Transcaucasia, **587**.
- Sturmia halli*, sp. n., parasite of *Heliothis armigera* in S. Rhodesia, **567**.
- Sturmia inconspicua* (parasite of *Diprion* spp.), in Germany, **398**; in Poland, **671**.
- Sturmia inconspicuoides*, parasite of *Cirphis loreyi* in Queensland, **186**.
- Sturmia protoparcis*, parasite of *Protoparce sexta* in Florida, **251**.
- Sturmia sericariae* (parasite of *Bombyx mori* in Japan), galvanometer for detecting, in host pupae, **442**; parasitised by *Mormoniella vitripennis*, **443**.
- Stylocryptus brevis*, parasite of spruce sawflies in Czechoslovakia, **518**.
- Stylocryptus erythrogaster*, parasite of spruce sawflies in Czechoslovakia, **518**.
- subarctica*, *Pristiphora* (*Lygaeonematus*).
- Subcidine, **605**.
- subcompleta*, *Microgaster*.
- subcristata*, *Epitrix*.
- subfumatus*, *Eutelus*.
- subguttatus*, *Microcryptus*.
- subnigrescens*, *Mermis*.
- subnudus*, *Anacentrinus*.
- subproximus*, *Anagyrus*.
- subscaber*, *Scolytus*.
- subsequalis*, *Pyrausta* (see *P. in-sequalis*).
- subsidiaria*, *Tortrix* (*Cacoecia*).
- subterranea*, *Symphylella*.
- Subterranean Clover (see *Trifolium subterraneum*).
- subvittatus*, *Prosoestus* (*Derelomus*).
- succincta*, *Patanga*.
- Sudan, Anglo-Egyptian, cotton pests in, **488, 572, 573, 574**; pests of *Sorghum* in, **572, 574**; *Ceroplastes africanus* in, **40**; locusts in, **479, 480, 481**; beneficial insects in, **40, 574**.
- Sudan Cotton Bollworm (see *Diparopsis castanea*).
- Suet, *Necrobia* spp. in, **584**.
- Sugar, types of, used for feeding insects, **61, 128, 345, 426, 682**; in baits, **92, 102, 131, 194, 291, 466, 496, 582**; in bait-sprays for *Cydia*, **300**; use of, in sprays and dusts against thrips, **425, 526**; possibly encouraging sooty moulds on *Citrus*, **425**. (See Syrup.)
- Sugar-cane, *Diatraea* on, in Br. Guiana, **182, 183, 505, 524**; pests of, in Formosa, **206, 339, 363, 364, 444, 446, 447**; pests of, in Hawaii, **90, 367, 368**; pests of, in India, **128, 291, 385, 456, 558, 575, 576**; pests of, in Mauritius, **611**; pests of, in Queensland, **87, 88, 185, 186, 187**; little attacked by pests in Peru, **165**; pests of, in Philip-pines, **368, 451, 667**; pests of, in U.S.A., **248, 371, 372, 373, 378, 382, 656-659**; pests of, in W. Indies, **24, 25, 182, 183, 238, 272, 382, 384, 424, 435, 502, 543, 657, 658, 659, 660**; food-plant of *Euxesta stigmatias*, **328**; susceptibility of varieties of, to pests, **24, 87, 88, 186, 238, 367, 372, 378, 384, 444, 543, 558, 575, 657**; effect of borers on weight and sucrose content of, **558**; insects and virus diseases of, **87, 658, 667**; insecticides causing injury to, **88, 368**.
- Sugar-cane Aphis, Yellow (see *Sipha flava*).
- Sugar-cane Beetle Borer (see *Rhabdocnemis obscura*).
- Sugar-cane Moth Borer (see *Diatraea saccharalis*).
- Sugar-cane Rootstock Weevil (see *Anacentrinus subnudus*).
- Sugar Maple (see *Acer saccharum*).
- Sugar Sorghum (see *Sorghum vulgare* var. *saccharatum*).
- sulcatus*, *Dendrosoter*; *Otiorrhynchus*; *Scolytus*.
- sulmo*, *Microphanurus*.

- Sulphite Lye, dust mixture containing, 431; as an emulsifier, 332.
- Sulphur, against *Aphis spiraeicola*, 461; effect of, on Coccid populations, 257, 377, 433; against Rhynchota on cotton, 244, 245, 246, 282, 380, 381, 417; against other Rhynchota, 72, 421, 463, 537, 595, 651; against mites, 55, 57, 127, 150, 164, 187, 256, 257, 308, 410, 429, 433, 460, 461, 595, 637; destroying predacious enemies of *Parateiranychnus pilosus*, 429; against *Psila rosae*, 497; against thrips, 71, 72, 377, 433, 460; against weevils, 249, 380; ineffective against *Cantharis obscura*, 623; dusting with, 71, 72, 150, 164, 187, 244, 245, 246, 282, 308, 377, 380, 381, 417, 429, 433, 461, 463, 623, 637, 651; carriers for, 187, 380; adsorbed on carriers, 150, 308; oil-impregnated dusts of, 308; in mixed dusts, 71, 179, 191, 213, 244, 245, 246, 247, 250, 371, 380, 381, 383, 417, 418, 421, 431, 461, 463, 537, 595; spraying with, 71, 72, 187, 256, 257, 429; wetting agents for, 70, 71, 80, 257, 460; aluminium sulphate with lime as an adhesive for, 256, 257; in mixed sprays, 52, 57, 71, 72, 139, 186, 410, 433, 460, 534, 595, 662; fumigation tests with, against ants, 44, 287; types of, 72, 80, 187; formulae containing, 52, 57, 72, 179, 186, 187, 244, 245, 246, 247, 250, 256, 257, 308, 380, 381, 383, 410, 417, 418, 460, 537, 595; basic copper arsenate compatible with, 421; effect of, on lead arsenate spray residues, 139; thiuram sulphides compatible with, 532; addition of zinc compounds to dusts of, preventing injury to *Citrus*, 433; interactions of, with other sprays on *Citrus*, 278, 425; causing injury to onion, 71, 72; unsuitable for use on hemp for smoking, 127; methods for determining particle-size distribution of, 541.
- Sulphur Nitride, as an insecticide, 78, 79.
- Sulphuric Acid, and sodium cyanide, for generating hydrocyanic-acid gas (*q.v.*), 260, 357, 440, 508.
- sulphurifera*, *Lissonota*.
- sumatranus*, *Dacryphalus*.
- sumatrensis*, *Compsilura concinnata*.
- (1875)
- Sun Spots, correlation of locust outbreaks with, 485.
- Sunflower, pests of, in Russian Union, 321, 682.
- Sunoco Oil, 435.
- Supella supellectilium*, paint for protecting books from, in Fiji, 366.
- Superphosphate, ineffective against *Halotydeus destructor*, 545; effect of, mixed with wheat before sowing against wireworms, 97.
- superstitiosus*, *Dysdercus*.
- suppressaria*, *Buzura*.
- surinamensis*, *Oryzaephilus* (*Silvanus*).
- suspensa*, *Anastrepha*.
- suturellus*, *Dysdercus*.
- Swede, pests of, in Britain, 96, 332, 333; pests of, in Denmark, 117; *Meligethes aeneus* on, in Germany, 511.
- Sweden, Thysanoptera on cereals and grasses in, 121; *Apion* spp. on clover in, 117; forest pests in, 122, 123; miscellaneous pests in, 355, 673; *Calandra* spp. in stored grain in, 118-120; Aphids of, 160; *Leskia aurea* in, 629; migrations of *Pieris brassicae* in, 609.
- Sweet Cassava (see *Manihot dulcis* var *aipi*).
- Sweet Pea, experimentally infected with lettuce mosaic, 671.
- Sweet Potato, locusts damaging, in Fr. W. Africa, 571; pests of, in Japan, 444, 445, 446, 620; *Brachmia macroscopa* on, in Korea, 362; pests of, in Loochoo Islands, 444, 616; pests of, in U.S.A., 285, 373, 379, 539, 643; pests of, in W. Indies, 239, 434; calcium chloroacetate injuring foliage of, 239; (tubers), treatment of, against *Cylas formicarius*, 379, 539; as baits for *Cylas* and wireworms, 373, 656.
- Sweet Potato Weevil (see *Cylas formicarius*).
- Switzerland, forest pests in, 169, 517; *Leptinotarsa decemlineata* in, 106, 350, 583; miscellaneous pests in, 270, 280; orchard pests in, 169, 232, 336, 438; *Phylloxera* on vines in, 46; *Acarapis woodi* infesting honey bees in, 169; *Stenomalus muscarum* in houses in, 201; summary of plant quarantines in,

- 344**; legislation against introduction of *L. decemlineata* into Britain from, **356**.
- Syagrus morio*, on cotton in Nyasaland, **126**.
- sycophanta*, *Calosoma*.
- Sylepta derogata*, *Eulophus* parasitic on, in Japan, **557**; in Fiji, **641**; in Seychelles, **335**; in Siam, **49**, **50**; on cotton, **49**, **50**, **557**; on *Hibiscus*, **335**, **641**.
- syma*, *Chrysoscharis*.
- Symitha mangifera*, on mango in Seychelles, **335**.
- Symphylella subterranea*, movements of, in soil in California, **411**.
- Sympiesis turcicus*, sp. n., parasite of *Lithocolletis platani* in Turkey, **219**.
- Synanthedon* (see *Aegeria*).
- Syngenaspis oleae* (see *Parlatoria*).
- Synopeas*, parasite of *Diplosis mori* in Korea, **338**.
- Syntomosphyrum indicum* (parasite of *Dacus*), introduced into Cook Islands, **365**; establishment of, in Fiji, **213**; introduced into Hawaii, **366**; introduced into Queensland from New South Wales, **602**; introduced into Samoa, **365**; synonymy of, **434**.
- Syria*, in dates in Egypt, **506**.
- Syringa* (see *Lilac*).
- Syringopais temperatella*, effect of meteorological conditions on, on cereals in Palestine, **127**.
- Syrphids, of Illinois, immature stages of, **82**.
- Syrphus balteatus*, bionomics and morphology of, in Britain, **628**, **629**.
- Syrphus luniger*, bionomics and morphology of, in Britain, **628**, **629**.
- Syrphus ribesii*, bionomics and morphology of, in Britain, **628**, **629**.
- Syrphus torvus*, predacious on *Anuraphis roseus* in Connecticut, **428**.
- Syrphus tricoloratus*, insects destroyed by, in Germany, **334**.
- Syrup, in baits for *Cydia*, **31**, **293**; in mopping mixture and spray against *Anthrenus*, **247**.
- Systates exaptus*, on maize and *Dolichos* in S. Rhodesia, **124**.
- Systates saeberlichii*, on cotton in Kenya, **666**.
- Systema hudsonias*, measures against, on potato in U.S.A., **342**.
- Systema taeniata blanda*, measures against, on potato in U.S.A., **342**.

T.

- tabaci*, *Thrips*.
- tabacum*, *Hypopteromalus*.
- Tabanus*, predacious on *Nymphula depunctalis* in Philippines, **364**.
- tabatae*, *Eutelus*.
- tabidus*, *Trachelus*.
- tachardiæ*, *Apanteles*.
- Tachinids, list of, in Rumania, **608**; classification of, **624**.
- Tachinomyia similis*, parasite of *Stilpnotia salicis* in U.S.A., **499**.
- Tachycines asynamorus*, bionomics and control of, in greenhouses in U.S.A., **651**, **652**.
- Tachypterellus quadrigibbus* (Apple Curculio), in New York, **533**; measures against, in Quebec, **664**.
- taeniata*, *Systema*.
- taeniopus*, *Chlorops*.
- Taeniothrips fedorovi*, bionomics of, on *Salvia sclarea* in Crimea, **43**.
- Taeniothrips inconsequens*, in Crimea, **43**; in U.S.A., **377**, **410**, **498**; on fruit trees, **43**, **377**, **410**, **498**; on maple, **498**; bionomics of, **498**; measures against, **410**, **498**.
- Taeniothrips simplex*, tests of greenhouse fumigant against, **272**.
- Tahiti, *Plaesus javanus* introduced from Fiji into, against *Cosmopolites sordidus*, **212**, **365**.
- takagii*, *Rhythmonotus*.
- Talc, toxicity of dusts of, to *Bruchus obtectus*, **531**; repellent to *Psila rosae*, **497**; as a carrier for dusts, **32**, **139**, **179**, **191**, **247**, **258**, **261**, **286**, **313**, **325**, **371**, **379**, **380**, **431**, **449**, **461**, **523**, **525**, **537**, **595**, **623**, **634**; affecting toxicity of certain insecticides, **139**, **258**, **261**; preventing detonation of sulphur nitride, **79**.
- Tamarix*, *Icerya purchasi* on, in Morocco, **691**.
- tamsuyensis*, *Melanotus*.
- tanaceti*, *Galeruca*.
- tanajoa*, *Tetranychus*.
- Tanganyika Territory, Aleurodids and cassava mosaic in, **94**, **153**; coffee pests in, **40**, **126**; cotton pests in, **222**, **492**; locusts in, **387**, **480**, **484**; beneficial insects in, **40**, **127**, **387**, **503**; *Schizobremia coffeae* introduced into Kenya from, **665**.

- Tank-mixture Method, for preparing sprays, **432**.
- Tanymecus destructor*, on maize in S. Rhodesia, **124**.
- Tanymecus palliatus*, food-plants and control of, in Russian Union, **45, 322, 407**; bionomics of, **322**.
- Tapinoma melanocephalum*, in houses in Formosa, **446**.
- Tar Distillates, as dormant sprays against orchard pests, **20, 115, 232, 236, 237, 333, 360, 428, 429, 467, 534, 535, 578, 662, 690**; interfering with natural control of *Paratetranychus pilosus*, **429, 662**; against pests of conifers, **517, 529**; against vine pests, **45, 689**; against Coccids on other plants, **402, 509**; soil treatment with, against *Rhagoletis cerasi*, **297**; as a repellent, **299, 420**; tests of toxicity and action of, on insects, **467**; fish killed by, **514**; types of, **45, 65, 297, 298, 428, 467, 535**; formulae for, **20, 45, 428, 517, 529, 534, 535, 689**; preparation of emulsions of, **420**; and mineral oils, **236, 534, 535**; as a carrier for paradichlorobenzene against borers, **527**; other insecticides combined with, **298, 689**; and injury to plants, **45, 65, 527, 535**; in spray for destroying potato plants and Aphids, **333**; other insecticides compared with, **236, 237, 429, 467, 509, 529, 534**.
- taraxaci*, *Macrosiphum*.
- Taraxacum dens-leonis* (see *T. officinale*).
- Taraxacum kok-saghyz*, pests of, in Russian Union, **44, 45**.
- Taraxacum megalorrhizon*, pests of, in Russian Union, **44**.
- Taraxacum officinale* (Dandelion), *Aleurodes brassicae* on, in Britain, **61**; pests breeding on, in Russian Union, **44, 45**.
- Targionia vitis*, natural enemies of, on vines in Italy, **471**.
- Tarnished Plant Bug (see *Lygus pratensis*).
- Taro (see *Colocasia*).
- Tarred Disks, against *Hylemyia brassicae*, **116**.
- tarsale*, *Trogoderma*.
- Tarsoneminae, of America and Hawaii, **224**.
- Tarsonemus*, on mushrooms in Pennsylvania, **79**.
- Tarsonemus bancrofti*, measures against, on sugar-cane in U.S.A., **657**.
- Tarsonemus floricolus*, on mushrooms and iris in U.S.A., **79**.
- Tarsonemus pallidus* (*fragariae*) (on strawberry), in Britain, **395**; ecology of, in Switzerland, **280**; measures against, **280, 396**.
- Tartar Emetic, in bait-spray for Trypetids, **256**; dusts and sprays containing, against thrips, **425, 525**; *Citrus* not injured by small quantities of, **257**; papers treated with solution of, against *Ctenolepisma*, **510**.
- Tarucus theophrastus*, parasites of, in India, **129**.
- Tasmania, pests of ornamental plants in, **21, 226**; orchard pests in, **20, 21, 159, 226**; vegetable pests in, **21, 226**; miscellaneous pests in, **20, 21, 510**; beneficial insects and biological control in, **20, 21, 294**; *Habrolepis dalmanni* introduced into Australia from, against *Asterolecanium variolosum*, **546**.
- tau*, *Aglia*.
- Tau-saghuiz (see *Scorzonera tau-saghyz*).
- taurella*, *Ochsenheimeria*.
- tavaresi*, *Aphis*.
- taveuniensis*, *Calotermes*.
- Tea, *Homona coffearia* on, in Ceylon, **19**; *Monema flavescens* on, in Japan, **207**; pests of, in Java, **94, 347**; pests of, in Formosa, **339, 340, 447**; mites on, in India, **128**; *Helopeltis bergrothi* a potential pest of, in Nyasaland, **126**; *Pulvinaria floccifera* on, in Transcaucasia, **455**.
- Tea Bark-borer (see *Linoclostis gonatias*).
- Teak, pests of, in Burma, **692, 693**; pests of, in India, **612**.
- Teak Borer (see *Phassus malabaricus*).
- Technomyrmex*, hindering biological control of Coccids in Seychelles, **335**.
- Technomyrmex detorquens* (*albipes*), fostering Coccids on coconut in Mauritius, **611**; measures against, **611**.
- Tectona grandis* (see Teak).
- tectus*, *Ptinus*.
- tegalensis*, *Chionaspis*.
- telarius*, *Tetranychus*.
- Telenomus*, parasite of sugar-cane moth borers in Formosa, **447**.

- Telenomus alecto*, parasite of *Diatraea saccharalis* in Porto Rico, 424.
- Telenomus beneficiens*, parasite of sugar-cane moth borers in Formosa, 364, 447.
- Telenomus beneficiens* var. *elongatus*, parasite of sugar-cane moth borers in Formosa, 447.
- Telenomus clisiocampae*, parasite of *Malacosoma disstria* in Minnesota, 597.
- Telenomus mitsukurii*, parasite of *Megymenum gracilicorne* in Japan, 441.
- Telenomus semistriatus* (see *Microphanurus*).
- Telenomus tischleri*, sp. n., parasite of *Dolycorus baccarum* in Germany, 632.
- Telenomus ullyetti* (parasite of *Heliothis armigera*), bionomics of, in S. Rhodesia, 16; proposed utilisation of, 17.
- Telenomus vassilievi*, parasite of *Eurygaster integriceps* in Russia, 555; suggested utilisation of, 555.
- Teleonemia lantanae* (destroying *Lantana*), establishment of, in Australia, 546, 603; shipped to New Caledonia and New Hebrides from Fiji, 212; introduced into Tonga, 212, 366; considered a synonym of *T. scrupulosa*, 366.
- Teleonemia morio*, on Anonaceae in Brazil, 566.
- Teleonemia scrupulosa*, *T. lantanae* considered a synonym of, 366.
- Temnoschoita quadripustulata* (*quadrimaculata*), bionomics and control of, on oil palms and banana in Dahomey, 348.
- temperatella*, *Syringopais*.
- Temperature, relations of locusts and grasshoppers to, 11, 12, 41, 92, 93, 146, 178, 345, 388, 393, 427, 480, 483, 484, 485, 553, 557, 569, 603, 604, 655; relations of other insects to, 15, 16, 17, 26, 27, 40, 41, 42, 47, 59, 60, 61, 63, 64, 99, 102, 118, 119, 120, 121, 146, 147, 149, 200, 216, 217, 218, 224, 225, 228, 229, 230, 234, 235, 254, 255, 262, 265, 266, 267, 299, 300, 305, 313, 314, 315, 316, 325-327, 337, 351, 357, 360, 361, 362, 374, 399, 403, 404, 405, 406, 408, 428, 441, 442, 451, 454, 455, 489, 491, 550, 553, 557, 564, 572, 586, 587, 588, 589, 590, 606, 607, 613, 615, 617, 622, 647, 658, 662, 663, 678, 681, 682, 687, 692; relations of mites to, 131, 147, 151, 209, 312, 313, 314, 318, 319, 552, 585, 625, 626, 672; control of, in small cabinets, 568. (See Bioclimatics.)
- Tenebrio molitor*, measures against, in flour mills in Russian Union, 685; suitability of, as a host for *Trichogramma evanescens*, 36; nutritional studies on, 624; tests of tar distillates on 467.
- tenebrioides*, *Zabrus*.
- Tenebroides mauritanicus*, in stored products in China, 451; associated with *Lasioderma serricorne* in stored tobacco and cumin seed in Cyprus, 270; in flour in Germany, 400; in Italy, 173; damaging string made from wood fibre in Japan, 440; in flour mills in Russian Union, 685; in stored grain in U.S.A., 341; predacious on other pests, 173, 400; toxicity of HCN to, 451.
- tenellus*, *Eutettix*; *Pipunculus trochanteratus*.
- tener*, *Polyblastus*.
- Tennessee, tobacco pests in, 252, 380, 652; beneficial insects in, 253, 254; parasites of *Apanteles congregatus* in, 254.
- tenthredinis*, *Mesoleius*.
- tenuicornis*, *Bothriophryne* (*Trichomasthus*); *Frankliniella*.
- Tenuipalpus*, measures against, on vines in Queensland, 365.
- Tenuipalpus oudemansi*, sp. n., on apple and beech in Holland, 301.
- Tenuipalpus phoenicis*, sp. n., on *Phoenix* in greenhouse in Holland, 301.
- tenuis*, *Heterotermes* (*Leucotermes*).
- tenuiscapa*, *Xylocopa*.
- Tephritis*, on chrysanthemums in Britain, 333; in Canary Islands, 333.
- Tephrosia*, cultivation of, for insecticides in Belgian Congo, 294; survey of data on, as an insecticide, 104.
- Tephrosia toxicaria*, pests of, in Porto Rico, 502.
- Tephrosia virginiana*, toxicity of dusts of, to *Pieris brassicae*, 250, 251.
- Tephrosia vogeli*, possibilities of, as a source of rotenone, 502.
- Termes assmuthi*, damaging sugar-cane in India, 558, 559.
- Termes badius*, in building timber in S. Rhodesia, 125.
- Termes pauperans*, in building timber in S. Rhodesia, 125.

- Termes transvaalensis*, in building timber in S. Rhodesia, 125.
- Terminalia catappa*, Lasiocampid on, in India, 385.
- terminaliae*, *Eupelmus*.
- terminalis*, *Eutane*.
- terminifera*, *Chortoicetes*.
- Termites, important genera of, in Australia, 545; of Italian E. Africa, 174; of W. Indies, 55, 384; attacking living plants, 89, 128, 222, 271, 464, 465, 523, 528, 544, 546, 558, 559; attacking timber, 55, 56, 125, 180, 181, 212, 239, 434, 464, 465, 498, 499, 545, 641, 693; susceptibility of timbers to, 239, 434, 465, 545; international exposure test of wood preservatives against, 180; measures against, 55, 89, 128, 180, 181, 222, 271, 465, 544, 693, 694; method of evaluating soil poisons against, 422; bacterial diseases of, 597; gaseous environment of, 282; classification and new species of, 384.
- terrae-reginae*, *Empoasca*.
- terrenus*, *Bruchus* (*Bruchidius*).
- Tessaratomia javanica*, attacking lac host-trees in India, 128.
- testacea*, *Luperina* (*Apamea*); *Palpostoma*.
- testaceicollis*, *Pristomerus*.
- testaceimanus*, *Lygocerus*.
- testaceus*, *Coptotermes*; *Laemophiloeus*; *Rhogas*.
- testudinea*, *Hoplocampa*.
- testulalis*, *Maruca*.
- tetensi*, *Dasyneura*.
- Tetracampe*, parasite of *Phytomyza ilicis* in Britain, 669.
- Tetracampe diprioni*, parasite of *Diprion similis* in Poland, 671.
- Tetracampe ruforum* (see *Achrysocharella*).
- Tetrachlorethane*, tests of, against *Rhagoletis cerasi*, 297.
- Tetracyphus odontomus*, on cotton in Kenya, 666.
- Tetrahydronaphthalene*, ineffective against *Cylas formicarius*, 539.
- Tetramethyl Thiuram Bisulphide* (see *Thiuram Sulphides*).
- Tetramorium guineense*, in Formosa, 363, 446; infesting houses, 446; fostering Aphids and Coccids, 363; utilisation of, against sugar-cane moth-borers, 364.
- Tetraneura fusiformis* (see *Byrsocrypta*).
- Tetraneura ulmi* (see *Byrsocrypta gallarum*).
- Tetranychus*, on vines in Germany, 103; on *Hibiscus* in India, 128; bionomics of, on apple in Japan, 209, 616; food-plants of, in Russian Union, 150, 308, 310, 313, 314, 403; effects of temperature and humidity on, 209, 313, 314; measures against, 103, 150, 308, 310.
- Tetranychus bioculatus* (see *Paratetranychus*).
- Tetranychus bituberculatus*, on pear in Japan, 225.
- Tetranychus fici*, on figs in India, 128.
- Tetranychus hindustanicus* (see *Schizotetranychus*).
- Tetranychus pacificus*, hibernation of, on apple in Washington, 525.
- Tetranychus sexmaculatus*, on *Citrus* in U.S.A., 256, 261; measures against, 261.
- Tetranychus tanajoa*, sp. n., measures against, on cassava in Brazil, 290.
- Tetranychus telarius*, on hops and mangels in Britain, 1, 332; on *Hydrangea* in Germany, 583; food-plants of, in India, 127; *Scymnus* predacious on, on papaya in Queensland, 603; food-plants of, in U.S.A., 79, 141, 261, 432, 583, 595, 649, 650; disseminating *Uromyces caryophyllinus* on carnations, 79; measures and tests of insecticides against, 1, 45, 127, 141, 142, 261, 272, 432, 583, 595, 649, 650.
- Tetranychus turkestanii*, factors affecting infestation of cotton by, in Central Asia, 147, 625, 626; *Stethorus punctillum* predacious on, 626.
- Tetrastichus*, hosts of, in India, 576, 577; parasite of *Crioceris asparagi* in Italy, 472; hosts of, in Japan, 144, 212; introduced into U.S.A. against *Galerucella luteola*, 144, 324; other hosts of, in U.S.A., 422, 528, 569; bionomics of, 324, 472; effect of cold storage on reproduction of, 144.
- Tetrastichus brevistigma* (parasite of *Galerucella luteola*), bionomics and value of, in U.S.A., 132.
- Tetrastichus coccinellae*, parasite of *Chilocorus* spp. in Caucasus, 304.
- Tetrastichus coerulescens*, parasite of *Gelechia cercerisella* in Kansas, 376.
- Tetrastichus giffardi*, utilisation of, against *Ceratitis capitata* in Brazil, 34.

- Tetrastichus giffardianus* (parasite of Trypetids), introduced into Cook Islands and Samoa, 365; introduced into Fiji, 212, 213; bionomics of, 212, 213.
- Tetrastichus haitiensis*, utilisation of, against *Prepodes* spp. in Jamaica, 239.
- Tetrastichus silvaticus*, parasite of *Malacosoma dissitia* in Minnesota, 597.
- Tetrastichus sokolowskii*, parasite of *Plutella maculipennis* in India, 575, 576; bionomics of, 576.
- Tetrastichus xanthomelaenae* (parasite of *Galerucella luteola*), introduced into U.S.A., 324; bionomics of, 324.
- Tettigoniella viridis* (see *Cicadella*).
- texana*, *Anomis* (see *A. luridula*); *Atta*.
- texanus*, *Microdus* (*Bassus*).
- Texas, *Atta texana* in, 287; cotton pests in, 53, 244, 245, 380, 381, 413, 417, 538; *Eutettix tenellus* in, 593, 594; *Paratiora* spp. in, 422, 651; miscellaneous pests in, 379, 537, 599; Mymarid parasites of *Psallus seriatus* in, 538.
- Textiles, pests of, and their control, 47, 140, 187, 188, 196, 237, 513, 584, 635.
- Thalassodes*, parasite of, of India, 129.
- Thallous Sulphate, tests of, in baits for grasshoppers, 134.
- Thanatophilus quadripunctatus*, predacious on *Erannis* spp. in Poland, 438.
- Thaneroclerus buqueti*, predacious on *Lasioderma serricorne* in Mauritius, 611.
- Thaumetopoea pityocampa*, bionomics and control of, on pine in Italy, 516.
- Thaumetopoea processionea*, bionomics and control of, on oak in Italy, 516.
- Thecodiplosis mosellana* (see *Sitodiplosis*).
- theobaldi*, *Thomasiniana*.
- Theophrastus*, as an economic entomologist, 592.
- theophrastus*, *Tarucus*.
- Therapha hyoscyami*, on tobacco in Poland, 162.
- Theresia* [Tachinid], *Paratheresia* considered distinct from, 143.
- Theresia* [Zygaenid] (see *Theresimima*).
- Theresia claripalpis* (parasite of *Diatraea saccharalis*), attempted introduction of, into Antigua from Trinidad, 25, 660; question of introduction of, into U.S.A., 143, 656, 658, 659; identity, forms and factors affecting distribution of, 143, 658, 659.
- Theresia diatraeae*, considered distinct from *T. claripalpis* (q.v.), 143.
- Theresia signifera*, considered distinct from *T. claripalpis* (q.v.), 143.
- Theresimima ampelophaga*, on plums in Cyprus, 271; on vines in Russian Union, 403, 683; use of females for trapping males of, 683.
- Theretra oldenlandiae*, on vines in Queensland, 365.
- Therioaphis ononidis* (see *Myzocallis*).
- thermoptera*, *Titanoceros*.
- Theronia atalantae*, hosts of, in Czechoslovakia, 145; parasite of *Dendrolimus spectabilis* in Japan, 211; parasite of *Ichneumon pisorius* in Poland, 677.
- Thespesia rogersi*, *Dysdercus fasciatus* on, in N. Rhodesia, 222, 492; experiment with *D. nigrofasciatus* and, 490.
- Thiocyanates, against Aphids, 236, 237, 259, 332, 533, 534; against Coccids and Aleurodids, 259; against Capsids, 236, 463; against Jassids, 413, 501; against Lepidoptera, 155, 236, 237, 332; against mites, 1, 259, 430; ovidical properties of, 1, 236, 331, 332, 533, 534; spray formulae containing, 1, 236, 258, 259, 413; spreaders and emulsifiers for, 259, 331; atomised sprays of oils containing, 155, 413; dusting with, 463; and lime-sulphur, 259; and oil emulsions, 236, 237, 259, 332; and pyrethrum, 413; causing injury to plants, 236, 534.
- Thiodiphenylamine, against *Cydia pomonella*, 66, 142, 273, 528, 653; against other Lepidoptera, 17, 377, 379, 431; ineffective against *Scirtothrips citri*, 425; tests of toxicity of, to insects, 142, 249, 287, 528, 537; in baits, 287, 537; formula for dusting with, 431; formulae for, in sprays, 66, 249, 379; wetting agent for, 377; and cryolite, 379; thiuram sulphides compatible with, 532; other insecticides compared with, 66, 79, 249.

- Thiuram Sulphides, in spray formulae as repellents for *Popillia japonica*, 532.
- Thomasiniana crataegi*, sp. n., on hawthorn in Britain, 673.
- Thomasiniana oculiperda*, *T. crataegi* compared with, 673.
- Thomasiniana theobaldi*, *T. crataegi* compared with, 673.
- thomsoni*, *Piestopleura*.
- thoracicus*, *Macrocentrus*; *Triaspis*.
- Thosea, on coconut in Philippines, 451.
- thrax*, *Erionota*.
- Thrips, measures against, on cotton in Peru, 164; on wheat in Sweden, 121.
- Thrips angusticeps*, on peas in Holland, 233; characters of, 233.
- Thrips lini* (*linarius*), on flax in Holland, 233, 234, 465; bionomics of and type of injury by, 233; synonymy and characters of, 233; measures and tests of insecticides against, 233, 234, 465.
- Thrips tabaci*, new Gamasid predacious on, in Britain, 672; bionomics of, in Crimea, 43; in Japan, 210; in Kenya, 666; in New Zealand, 546; in Porto Rico, 436; in U.S.A., 72, 141, 372, 525; on cotton, 43, 372, 672; on tobacco, 43, 210, 546; on vegetables, 43, 71, 72, 372, 436, 546; on other plants, 141, 525, 666; transmitting spotted wilt, 546; measures against, 71, 141, 142, 436, 525, 666.
- Thrips, Banana Rust (see *Scirtothrips signipennis*).
- Thrips, Bean (see *Hercothrips fasciatus*).
- Thrips, Cacao (see *Selenothrips rubrocinctus*).
- Thrips, Citrus (see *Scirtothrips citri*).
- Thrips, Flower (see *Frankliniella moultoni*).
- Thrips, Onion (see *Thrips tabaci*).
- Thrips, Pear or Prune (see *Taeniothrips inconsequens*).
- Thrips, Wheat (see *Haplothrips tritici*).
- thripsi*, *Typhlodromus*.
- Thuja*, restrictions on importation of, into Britain, 356; *Phloeosinus bicolor* on, in France, 225; insecticides causing injury to, 530.
- thujae*, *Phloeosinus*.
- Thurberia*, *Platyedra gossypiella* scarce on, in Arizona, 381.
- Thyanta custator*, and boll rots in cotton in Arizona, 416, 417; measures against, 417.
- Thymus*, relation of *Dociostaurus maroccanus* to, in Transcaucasia, 321.
- thymus*, *Hyssopus*.
- Thysanoptera, list of, in Louisiana, 372; cellular structure of grasses as protection from, 121; possibly causing leaf-curl of chillies, 494; and plant diseases, 360, 448, 472; predacious species of, 371, 410, 429, 453; natural enemies of, 25, 239, 672; new species of, 50.
- Tibicen haematodes*, on vines and sloe in Germany, 46.
- Tiger Pear (*Opuntia aurantiaca*) (see *Opuntia*).
- Tilia* (see Lime, *Tilia*).
- Tilia amurensis*, *Eutetrappa sedecimpunctata* on, in Russian Far East, 43.
- Tilia glabra*, *Alsophila pometaria* on, in Canada, 663.
- Timber, Coleoptera in, 6, 7, 60, 78, 110, 160, 181, 202, 203, 204, 268, 321, 322, 328, 335, 465, 469, 493, 499, 509, 520, 564, 584, 600, 611, 612, 693; age of, affecting infestation by *Hylotrupes bajulus*, 520; termites in, 55, 56, 125, 180, 181, 212, 239, 434, 464, 465, 498, 499, 545, 641, 693; other pests of, 61, 181, 239, 337, 342, 401, 498, 499, 504, 562, 693; analysis of, for preservatives, 280.
- Timocratica haywardi*, sp. n., on fruit trees in Argentina, 188.
- Tinea columbariella*, characters of eggs of, 49.
- Tinea fuscipunctella*, characters of eggs of, 49.
- Tinea granella*, bionomics of, in stored grain in Germany, 220; in stored products in Italy, 172; in flour mills in Russian Union, 685; measures against, 220, 685.
- Tinea misella* (*insectella*), synonymy of, 50.
- Tinea pellionella*, tests of moth-proofing preparations against, 140; characters of eggs of, 49.
- Tinea pistaciae*, bionomics of, on pistachio in Greece, 452, 453.
- Tinea secalella*, sp. n., bionomics of, in Germany, 220; in Poland, 220.

- Tinea vastella*, measures against, damaging horns in Belgian Congo, 294.
- tineivorus*, *Typhlodromus*.
- Tineola biselliella*, infesting house insulation in U.S.A., 640; tests of moth-proofing preparations and fumigants against, 140, 635.
- Tingis pyri* (see *Stephanitis*).
- Tiphia*, parasite of Lamellicorns in Florida, 657.
- Tiphia hispaniolae*, sp. n., bionomics of, in Haiti, 84.
- Tiphia popilliaivora*, utilisation of, against *Popillia japonica* in U.S.A., 84, 377, 533; influence of instars of *P. japonica* on, 84; strains of, 377.
- Tiphia segregata*, parasite of *Anomala orientalis* in Hawaii, 367.
- Tiphia vernalis*, in U.S.A., 377, 533; liberation of, against *Popillia japonica*, 533; disseminating diseases of *P. japonica*, 377.
- tiphiaeformis*, *Synanthedon* (see *Aegeria typhiaeformis*).
- Tipula*, control of, in golf greens, 95; other measures against, 519.
- Tipula czizeki*, damaging cereals and pastures in Germany, 519.
- Tipula oleracea*, bionomics of, in Britain and Germany, 95, 519.
- Tipula paludosa*, on wheat in Denmark, 117; bionomics of, in Britain and Germany, 95, 519.
- Tipula vernalis*, observations on, in Britain, 95, 96.
- tipulae*, *Leptacis*.
- Tiracola plagiata*, on cacao in New Guinea Territory, 544.
- Tirathaba trichogramma*, Tineid feeding on pupae of, in Fiji, 213.
- Tischeria complanella*, on oak in Germany, 204.
- Tischeria omissa*, bionomics of, on hollyhock in California, 569.
- tischleri*, *Telenomus*.
- Titanoceros thermoptera*, bionomics of, in Australia, 545.
- Tits, destroying *Cydia pomonella*, 114; question of danger of arsenical insecticides to, 159.
- Toads, destroying insects, 160, 185, 407, 452, 641, 656; damaging trap-ditches in beet fields, 407.
- Tobacco, pests of, in S. Africa, 360; *Phthorimaea operculella* on, in Brazil, 289; *Agrotis ypsilon* on, in Fiji, 213; Aphids on, in Germany, 633; locusts damaging, in Greece, 478; pests of, in Japan, 210, 444; new Aleurodid on, in Madagascar, 637; *P. heliopa* on, in Mysore, 625; pests of, in Netherlands Indies, 17, 493, 637; *Heliothis virescens* on, in Philippines, 452; Rhynchota on, in Poland, 162; pests of, in S. Rhodesia, 124, 125, 226; pests of, in Russia, 41, 43; pests of, in U.S.A., 84, 177, 178, 251, 252, 253, 254, 380, 599, 652; *H. armigera* on, in Victoria, 389, 390; insects and virus diseases in, 84, 124, 125, 226, 302, 303, 360, 444, 493, 546, 547, 637, 688; effects of insecticides on, 177, 426.
- Tobacco (Stored), pests of, and their control, 50, 125, 154, 196, 210, 234, 235, 270, 380, 513, 611.
- Tobacco (as an insecticide), dusting with, 177, 353, 667; as a carrier for dusts, 177, 250, 371, 667; tests of sprays containing, against *Bemisia gossypiperda*, 560; action of, against *Psila rosae*, 497.
- Tobacco Beetle (see *Lasioderma serricorne*).
- Tobacco Hornworm (see *Protoparce*).
- Tobacco Stem Borer (see *Phthorimaea heliopa*).
- Tobago, *Coptotermes testaceus* in, 56, 384.
- todo, *Xyleborus*.
- Toluene, and carbon tetrachloride, as a solvent for dinitro-o-cyclohexylphenol, 261.
- Tolyphus*, on *Scorzonera tau-saghyz* in Kazakstan, 44.
- Tomaspis*, on sugar-cane in Florida, 658.
- Tomaspis guppyi*, bionomics and control of, on sugar-cane in Trinidad, 543.
- Tomaspis saccharina*, 543; soil types and varieties of sugar-cane in relation to, in Trinidad, 24, 384; measures against, 24.
- Tomato, *Paratrioza cockerelli* on, in greenhouses in Alberta, 176; pests of, in Australia, 187, 281, 389, 449, 603; pests of, in greenhouses in Britain, 115, 333; pests of, in Fiji, 641; *Tetranychus telarius* on, in India, 127; *Phthia picta* on, in Jamaica, 239; *Acanthocoris sordidus* on, in Japan, 446; new mite on, in Morocco, 636; relation of *Thrips tabaci* to spotted wilt in, in New Zealand, 546, 547; *Myzus persicae* on, in S. Rhodesia, 125; pests of, in

- Asiatic Russia, 589, 609, 679 ; pests of, in U.S.A., 72, 73, 79, 142, 252, 253, 340, 372, 379, 408, 422, 431, 525, 599, 651, 652 ; effect of infestation by *Paratrioza cockerelli* on, 72, 73, 651 ; not attacked by *Phthorimaea operculella*, 289 ; as reservoir of virus diseases of other plants, 125, 688 ; insects caught by secretion and spines of leaves of, 113, 142 ; tops of, in baits for *Listroderes obliquus*, 186 ; lime-sulphur causing injury to, 72, 73.
- Tomato (Fruit), legislation dealing with fumigation of, against *Popillia japonica* in U.S.A., 274 ; problems of insecticide residues on, 79, 432.
- Tomato Mite (see *Phyllocoptes lycopersici*).
- Tomato Psyllid (see *Paratrioza cockerelli*).
- Tomato Worm (see *Protoparce sexta*).
- tomentosus, *Lyctus*.
- Tomocobia*, synonymy of, 434.
- Tonga, introduction of beneficial insects from Fiji into, 212, 366, 641.
- torquens*, *Contarinia* (*Dasyneura*) (see *C. nasturtii*).
- Tortilia viatrix*, measures against, in stored senna in New Jersey, 29.
- Tortrix dumetana*, parasites of, on ramie in Transcaucasia, 587.
- Tortrix heparana*, on soy beans in Manchuria, 340.
- Tortrix lafauryana*, parasites of, on ramie in Transcaucasia, 587.
- Tortrix murinana*, on *Abies alba* in Czechoslovakia, 469.
- Tortrix podana*, tests of winter washes against, on apple in Britain, 236, 237.
- Tortrix postvittana*, measures against, on vines in S. Australia, 164.
- Tortrix pronubana*, imported into Germany with carnation cuttings from Italy, 218 ; on poplar and willow in Morocco, 196 ; study of, 218.
- Tortrix rosaceana*, on dewberry in Utah, 31.
- Tortrix sarcostega*, bionomics of, on fruit trees in Baluchistan, 51.
- Tortrix subsidiaria*, on fruit trees in Baluchistan, 577.
- Tortrix viridana*, on rhododendron in Britain, 295.
- Tortrix xylostean*, bionomics and control of, on fruit trees in Japan, 361.
- torvus*, *Syrphus*.
- Toxoptera graminum*, possible vector of disease of sugar sorghum in Italy, 472.
- trabealis*, *Emmelia*.
- Trachea basilinea*, on wheat in Central Asia, 453 ; measures against, 454.
- Trachea secalis*, rôle of harvesting machinery in control of, on wheat in Russia, 315 ; bionomics of, in Scotland, 122.
- Trachelus tabidus* (Black Wheat-stem Sawfly), in U.S.A., 83, 381 ; *Collyria calcitrator* introduced from Canada against, 381.
- tragopoginis*, *Amphipyra*.
- transsylvanica*, *Hypera* (*Phytonomus*).
- transvaalensis*, *Termes*.
- trapezalis*, *Marasmia*.
- trapezina*, *Calymnia*.
- Traps, for Coleoptera, 42, 90, 184, 347, 410, 457, 466, 532 ; mobile types of, for *Meligethes aeneus*, 511 ; for *Forficula auricularia*, 510 ; for Lepidoptera, 466, 577, 614, 683, 689 ; for Trypetids, 270. (See Light-traps.)
- Treacle (see Molasses).
- Tree Pear (*Opuntia streptacantha*) (see *Opuntia*).
- Tremex* spp., symbiosis of, with wood-destroying fungi, 401.
- tremulae*, *Melasoma* (*Chrysomela*).
- Trenches, against *Celerio lineata*, 239 ; against locusts, 450, 477, 618 ; against weevils on beet, 407, 470, 678.
- Trialeurodes vaporariorum* (Greenhouse Whitefly), in Britain, 333, 356, 437 ; in Czechoslovakia, 471 ; utilisation of *Encarsia formosa* against, 333, 437 ; fumigants against, 272, 356 ; effect of adding chloropicrin to dusts against, 471.
- triangularis*, *Microbracon* (*Bracon*).
- Triaspis thoracicus*, introduced into U.S.A. against Bruchids, 381, 599.
- Tribolium* (in flour), in Germany, 223 ; fumigants against, in U.S.A., 378 ; *Corynetes coerules* probably predacious on, 584.
- Tribolium castaneum*, in imported coffee in Britain, 666 ; fumigation experiment against, in China, 451 ; in stored grain and house

- insulation material in U.S.A., **341, 640**; predacious on *Ephestia kuehniella*, **400**; feeding on potato flour, **65**; characters of, **623**.
- Tribolium confusum*, in imported coffee in Britain, **666**; measures against, in flour mills in Russian Union, **685**; in stored grain in U.S.A., **341**; action of electromagnetic waves on, **137**; HCN not causing protective stupefaction in, **344**; studies of nutrition, physiology and populations of, **27, 80, 174, 624**; method for determining movement of, in flour, **52**; characters of, **623**.
- Tribolium destructor*, in imported *Lantana* seed in Britain, **623**; characters and distribution of, **623**.
- Tribolium madens*, characters of, **623**.
- Tribolium navale*, auct. (see *T. castaneum*).
- Trichacis remulus*, introduced into U.S.A. against *Mayetiola destructor*, **381**.
- Trichispa sericæ*, bionomics and control of, on rice in Madagascar, **664**.
- Trichlorethylene, fumigation with, **120, 539**.
- Trichlorobenzene, as a soil insecticide against termites, **422**.
- trichodactyla*, *Hylemyia* (*Chortophila*).
- Trichogramma* (parasite of Lepidopterous eggs), in Canada, **663**; in Central Asia, **609**; in India, **577**; introduction and utilisation of Burmese species of, in India, **612**.
- Trichogramma australicum*, parasite of sugar-cane moth-borers in Formosa, **364, 447**.
- Trichogramma evanescens* (parasite of Lepidopterous eggs), **588**; in Italy, **4**; in Minnesota, **597**; in Poland, **677**; local races, breeding and utilisation of, in Russian Union, **109, 148, 304, 305, 589, 590**; characteristics affecting suitability of hosts for, **35-37, 390**; factors concerned in host-finding by, **166**; *T. semblidis* distinct from, **390**.
- Trichogramma japonicum*, parasite of *Chilo simplex* in Japan, **619**; mass rearing of, **619**.
- Trichogramma luteum* (parasite of *Heliothis armigera*), bionomics of, in S. Rhodesia, **16, 17**.
- Trichogramma minutum*, in India, **612**; introduced into Philippines, **184, 452**; in U.S.A., **540, 656**; in W. Indies, **424, 435, 660**; parasitising *Diatraea*, **424, 435, 656, 660**; parasitising other Lepidoptera, **184, 612**; sawfly parasitised by, **540**; rearing and utilisation of, **435, 452, 612, 656, 660**; climatic factors affecting, **435, 660**.
- Trichogramma semblidis*, bionomics of, in Britain, **36, 390, 391**; distinct from *T. evanescens*, **390**.
- trichogramma*, *Tirathaba*.
- Trichogrammatoidea nana*, parasite of eggs of sugar-cane moth-borers in Formosa, **447**.
- Trichomasthus*, characters distinguishing *Bothriophryne* and, **504**.
- Trichomasthus tenuicornis* (see *Bothriophryne*).
- Trichopsidea oestracea*, parasite of grasshoppers in Australia, **56**.
- Trichospilus pupivora*, liberation of, against *Nephantis serinopa* in Ceylon, **638**.
- Trichosporium symbioticum*, Scolytid associated with, on *Abies* in California, **284**.
- Trichothrips liliorus* (see *Hoplothrips*).
- tricinctus*, *Syrphus*.
- tricolor*, *Encarsia*.
- Tricesylphosphate, papers treated with solution of, against *Ctenolepisma*, **510**.
- Triethanolamine Oleate, as an emulsifier for oils, **411, 642**; affecting oil deposits of sprays, **411**.
- trifasciatus*, *Closterocerus*.
- trifenestrata*, *Cricula*.
- Trifidaphis phaseoli*, on cotton in Russia, **215**.
- Trifolium* (see *Clover*).
- Trifolium hybridum*, *Apion seniculum* on, in Latvia, **47**.
- Trifolium subterraneum*, *Halotydeus destructor* on, in Australia, **545**; *Collembola* on, in New Zealand, **550, 551**.
- trigonophymi*, *Sarcophagulopsis*.
- Trigonophymus arrogans*, bionomics and control of, in Argentina, **213, 214, 476**.
- trimaculatus*, *Macrocentrus* (*Leptozele*).

- Trinidad, cotton pests in, **220, 221** ; miscellaneous pests in, **24, 85** ; *Tomaspis* spp. on sugar-cane in, **24, 384, 543** ; parasites and biological control of *Diatraea* spp. in, **24, 183, 505** ; termites damaging timber and buildings in, **55, 56, 384** ; *Larra americana* apparently not occurring in, **85** ; beneficial insects introduced into other W. Indian Islands from, **25, 239, 502**.
- trinitatis*, *Azya*.
- Trionymus levis*, sp. n., in Caucasus, **680**.
- Trionymus mori*, sp. n., on mulberry in Japan, **103**.
- Trionymus soja*, sp. n., on soy bean in Japan, **103**.
- Trioza nigricornis*, bionomics of, in Germany, **636** ; importance of, on potato, **636**.
- Triphleps* (see *Orius*).
- triseti*, *Dasyneura*.
- Trisetum flavescens*, new Cecidomyiid on, in Austria, **635**.
- Trisopsis*, predacious on *Tyroglyphus farinae* in Russian Union, **320**.
- triste*, *Opatrum*.
- tristicolor*, *Orius* ; *Lachnosterna* (*Phyllophaga*).
- trisulcus*, *Megastigmus* (*Epimegastigmus*).
- Tritaxys braueri*, sp. n., parasite of *Cirphis unipuncta* in Queensland, **294**.
- Tritaxys goniaeformis*, apparently confined to Tasmania, **294** ; *T. braueri* recorded as, **294**.
- tritici*, *Contarinia* ; *Frankliniella* ; *Haplothrips* ; *Hylemyia* (*Phorbia*).
- Triticum spelta*, nutritive value of flour and groats of, for *Ephestia kuehniella*, **64**.
- Tritneptis*, status and key to N. American species of, **434**.
- Tritneptis diprionis*, sp. n., parasite of sawflies in U.S.A., **434**.
- Tritneptis hemerocampae*, type of genus, **434**.
- Tritneptis klugi*, synonymy of, **434**.
- Tritneptis koebeli*, sp. n., parasite of sawfly in California, **434**.
- Tritneptis scutellata*, synonymy of, **434**.
- Triumfetta*, *Dysdercus supersticiosus* on, in N. Rhodesia, **492**.
- trivialis*, *Colaspis*.
- trivittatus*, *Leptocoris*.
- trochanteratus*, *Pipunculus*.
- Troctes divinatorius* (see *Liposcelis*).
- Trogium pulsatorium*, measures against, in houses in U.S.A., **648**.
- Trogocarpus ballestrerii* (see *Megastigmus*).
- Trogoderma* spp., review of feeding habits of, **196**.
- Troilus luridus*, in Britain, **632** ; in Germany, **218, 354, 632** ; predacious on noxious insects, **218, 354** ; parasite of, **632**.
- tropicalis*, *Lachnus* (*Pterochlorus*).
- Tropidophryne*, key to species of, **503** ; characters of, **504**.
- Tropidophryne flanderi*, question of systematic position of, **504**.
- Tropidophryne melvillei*, sp. n., parasite of *Pseudococcus* in Kenya, **503**.
- Tropidophryne natalensis*, sp. n., presumably parasitic on *Pseudococcus citri* in Natal, **503**.
- truculenta*, *Bactra*.
- truncatulus*, *Lixus* (*Hypolixus*).
- tryoni*, *Biosteres* ; *Dacus* (*Chaetodacus*, *Strumeta*) *ferrugineus*.
- trypetes*, *Chilo*.
- Trypetids*. (Fruit-flies), legislation dealing with control of, in W. Australia, **130** ; key to intercepted, in Russian Union, **439**.
- Tryphon utilis*, parasite of *Pristiphora wesmaeli* in Germany, **217**.
- Trypodendron* spp., *Rhizophagus* spp. predacious on, on *Picea* in Sakhalin and Japan, **339**.
- Trypoxys carpini*, in building timber in Russia, **322**.
- Trypterygium wilfordi*, tests of insecticide prepared from **450**.
- Tsuga* spp., restrictions on importation of, into Britain, **356** ; pests of, in U.S.A., **378, 499**.
- tsugae*, *Chermes* (*Adelges*).
- Tuberolachnus* (see *Lachnus*).
- tuberosula*, *Platygaster*.
- tubulorum*, *Lepidosaphes*.
- Tulip, Aphids and breaking disease of, in Oregon, **369**.
- tulipae*, *Anuraphis*.
- tulipaella*, *Rhopalosiphoninus* (see *R. staphyleae*).
- tumulosus*, *Ligyris*.
- Tung-nut Tree (see *Aleurites*).
- Tunisia, locusts in, **478** ; *Phylloxera* on vines in, **10** ; summary of plant quarantines in, **344**.
- turanicum*, *Lecanium coryli* ; *Macrosiphum* (*Acyrtosiphon*) *gossypii*.
- turca*, *Otiorrhynchus*.
- turcicus*, *Entedon auronitens* ; *Symptesis*.

- Turf, Tipulid larvae and their control in, in Britain, **95**; damaged by *Blissus hirtus* in Canada, **601**; insects damaging, in Holland, **269**; treated with lead arsenate against *Popillia japonica* in U.S.A., **533**; damaged by *B. leucopterus* in Trinidad, **25**.
- turionana*, *Rhyacionia* (*Evetria*).
- turkestanii*, *Tetranychus*.
- turkestanicus*, *Phloeosinus*.
- Turkey, miscellaneous pests in, **218, 452, 522**; beneficial insects in, **219, 522**; summary of plant quarantines in, **274**.
- Turkeys, destroying *Cleonus punctiventris* in Czechoslovakia, **470**.
- turneri*, *Nysius*.
- Turnip, pests of, in Denmark, **117**; pests of, in Louisiana, **250, 371, 373**; *Hylemyia radicum* on, in Morocco, **605**; Aphids and mosaic disease of, in New York, **273, 274**; *Nysius turneri* on, in Tasmania, **226**; in baits for *Listroderes obliquus*, **249**.
- Turpentine, wood impregnated with mixture containing, against Coleoptera, **182**; oil palms treated with, against *Oryctes*, **347**.
- Tychius* spp., on lucerne in Russia, **108**.
- Tyloclerma brassicae*, sp. n., on cabbage in Brazil, **132, 183**; new parasite of, **183**.
- Tyloclerma foveolata*, on strawberry in Arkansas, **178**.
- Tyloclerma fragariae*, bionomics of, on strawberry in Arkansas, **178**.
- typhiaeformis*, *Aegeria* (*Synanthedon*).
- Typhlocyba froggatti* (*australis*, Frogg.), measures against, on fruit trees and hawthorn in Australia, **21, 292**; in New Zealand, **292**.
- Typhlodromus thripsi*, sp. n. (predacious on *Thrips tabaci*), bionomics of, in Britain, **672**.
- Typhlodromus tineivorus*, predacious on *Ephestia kuehniella* in Germany, **400**.
- typographus*, *Ips*.
- Tyrophorus viridicyaneus*, bionomics and control of, on sweet potato in U.S.A., **285, 286**; in Mexico, **285**.
- Tyria jacobaeae* (attacking ragwort), failure to establish, in Australia, **282**; local establishment of, in New Zealand, **449**; insects and birds destroying, **282, 449**.
- Tyroglyphus farinae* (in stored grain and flour in Russian Union), not surviving under field conditions in Siberia, **312**; predacious enemies of, **319, 320**; measures against, **685**.
- Tyrophagus putrescentiae*, rare in stored grain in Siberia, **312**; not surviving under field conditions, **312**.

U.

Uganda, new Encyrtid parasite of Coccids in, **503**; locusts in, **482, 666**.

ugandum, *Apion* (*Piezotrachelus*).

uhleri, *Horistonotus*.

ullyetti, *Telenomus*.

ulmi, *Eriosoma*; *Lepidosaphes*; *Tetraneura* (see *Byrsocrypta gal-larum*).

ulmi, auct., *Oligonychus* (see *Paratetranychus pilosus*).

ulmicola, *Myzocallis* (*Sappocallis*).

Ulmus (see Elm).

Ulmus japonica, *Saperda octomaculata* on, in Russian Far East, **42**.

Ulmus propinqua (and var. *suberosa*), bark characters affecting susceptibility of, to pests in Japan, **443**.

Ulobaris loricata, bionomics of, on beet in Kazakstan, **152**.

Ultra-sulphur, **308**.

Ultrawet, as a wetting and spreading agent for sprays, **71, 72**; increasing efficiency of cubé dust, **177**.

umbra, *Pyrrhia*.

umbrinus, *Microterys*.

Uncaria gambir (Gambier), *Oreta carnea* on, in Sumatra, **385**.

undalis, *Hellula*.

undulata, *Phyllotreta*.

unicolor, *Byturus*.

unicostata, *Monosteira*.

unifasciatum, *Lecanium* (*Sphaerolecanium*).

unipuncta, *Cirphis*.

United States of America, cereal pests in, **80, 138, 229, 230, 280, 295, 327, 378, 379, 381, 542, 599, 600, 645**; *Citrus* pests in, **343, 377, 642, 653**; cotton pests in, **242, 243, 244, 245, 246, 247, 380, 381, 599**; pests of forest and shade trees in, **53, 65, 67, 68, 77, 132,**

138, 170, 324, 342, 368, 369, 377, 378, 382, 392, 434, 498, 499, 528, 540, 546, 599, 600, 644, 645, 647 ; pests of greenhouse and ornamental plants in, 141, 142, 419, 592, 600, 652, 654, 673 ; pests of leguminous plants in, 82, 83, 370, 371, 381, 415, 599, 600, 645 ; miscellaneous pests in, 377, 380, 599, 600 ; orchard pests in, 272, 273, 343, 377, 382, 419, 426, 434, 643, 648 ; pests of small fruits in, 139, 377, 380, 395, 596 ; ecology and control of pasture insects in, 527 ; pests of solanaceous plants in, 251, 252, 253, 254, 378, 379, 380, 418, 422, 563, 599 ; pests of sweet potato in, 285, 373, 379, 539, 643 ; stored-product and household pests in, 341, 378, 380, 382, 600, 640, 648 ; official testing of moth-proofing preparations in, 140 ; pests of timber in, 498, 499, 600 ; new Aphids in, 336, 596 ; distribution of *Empoasca fabae* in, 83 ; grasshoppers in, 76, 138, 139, 240, 569, 538, 646, 654, 655 ; *Popillia japonica* in, 104, 138, 139, 165, 180, 274, 377, 532, 533, 591 ; wireworms in, 28, 41, 71, 77, 418 ; insects and plant diseases in, 65, 68, 77, 370, 378, 395, 563, 645 ; *Septobasidium* associated with Coccids in, 242 ; beneficial insects and biological control in, 80, 81, 132, 170, 251, 253, 324, 377, 378, 379, 381, 382, 410, 422, 434, 499, 540, 596, 599, 615 ; new fungus infesting *Heliothis armigera* in, 392 ; annual insect population records in, 141 ; organisation of economic entomology in, 261, 407, 408 ; plant pest legislation in, 176, 274, 275, 344, 591 ; list of pests intercepted in quarantine in, 462 ; patents relating to pest control in, 224, 394 ; introduction of beneficial insects into other countries from, 382, 544, 546, 640 ; pests imported into other countries from, 328, 616 ; risk of introduction of *Popillia japonica* into Bermuda from, 85, 86 ; legislation restricting importation of potatoes and apples into Britain from, 356. (See also under the various States.)

urichi, *Liothrips*.
Urochela luteovaria, on pear in China, 450.

Uromyces caryophyllinus, *Tetranychus telarius* disseminating, on carnation in Massachusetts, 79.
Urosigalphus, parasite of *Chalcodermus bondari* in Brazil, 414.
Urosigalphus chalcodermi, 414.
urozonus, *Eupelmus*.
urticae, *Vanessa*.
Utah, *Crioceris asparagi* on asparagus in, 426 ; forest pests in, 427, 567, 568 ; pests of small fruits in, 31, 596 ; pests of leguminous crops in, 29, 462 ; *Anabrus simplex* and grasshoppers in, 29, 48 ; beneficial insects and biological control in, 30, 31, 463, 596 ; lizards destroying insects in, 48.
utibilis, *Lariophagus* (see *L. distinguendus*).
utilis, *Tryphon*.

V.

Vaccinium myrtillus, *Erannis* spp. on, in Poland, 438.
Vacuum Cleaner, for volatilising paradichlorobenzene, 644.
Vacuum Fumigation, 174, 181, 416, 541, 542, 550, 605 ; chemico-biological bases of improvements in, 201, 202.
validirostris, *Pissodes*.
vanderwulpi, *Cadurcia*.
vaneeckei, *Liothrips*.
Vanessa spp., Pentatomids experimentally attacking, 354.
Vanessa cardui, parasites and diseases of, on ramie in Transcaucasia, 587.
Vanilla, *Ecpantheria icasia* on, in Porto Rico, 501.
Vanilla Essence, in bait for *Dacus psidii*, 131.
vaporariorum, *Trialeurodes*.
variabilis, *Hypera* (*Phytonomus*) ; *Lacon*.
variana, *Peronea*.
varians, *Anthonomus* ; *Aphis* ; *Chrysomela* (*Chrysolina*) ; *Cyrtopeltis* (see *Engytatus geniculatus*).
varicornis, *Monolepta*.
variegata, *Adonia* ; *Pachyprotasis*.
varinervis, *Antholcus*.
variolosum, *Asterolecanium*.
varius, *Anthrenus* (see *A. verbasci*).
varivestis, *Epilachna*.
vassilievi, *Telenomus*.
vastatrix, *Perkinsiella* ; *Phylloxera* (see *P. vitifoliae*).

- vastella*, *Tinea*.
vayssierei, *Bemisia*.
 Vegetable Marrow, probable reservoir of virus infecting spinach in Britain, **672**.
 Vegetable Weevil (see *Listroderes obliquus*).
velox, *Oxya*.
 Velvet Bean (see *Stizolobium*).
 Velvet Bean Caterpillar (see *Anticarsia gemmatalis*).
 Venezuela, *Ceratitis capitata* reported in, **24**; *Larva americana* in, **85**.
venosata, *Diatraea*.
ventralis, *Exochomus*; *Scolytus*.
ventricosus, *Pediculoides*.
Venturia inaequalis, **664**.
verbasci, *Anthrenus*.
Verbascum thapsiforme, Pentatomids on, in Germany, **353**.
 Vermont, *Malacosoma disstria* in, **377**.
vernalis, *Tiphia*; *Tipula*.
vernata, *Palaearctica*.
verrucivorus, *Decticus*.
versicolor, *Ampeloea*; *Meteorus*; *Trogoderma*.
versutus, *Adoretus*.
verticalis, *Xylocopa*.
verticillata, *Eupristina*.
vestitus, *Anthonomus*; *Hylesinus* (*Chaetoptelius*).
vesuviana, *Carpomyia*.
 Vetch Bruchid (see *Bruchus brachialis*).
 Vetches, pests of, in Russian Union, **322, 454, 552**; *Bruchus brachialis* on, in U.S.A., **381, 599**; mites in stored seed of, **318**.
Vetiveria nigriflora, relation of locusts to in Fr. W. Africa, **12, 571**.
vetusta, *Agrotis* (*Abagrotis*).
viatrix, *Tortilia*.
Viburnum opulus, *Aphis fabae* on, in Germany, **686**.
Vicia (see Vetches).
Vicia faba (see Beans).
vicina, *Musca domestica*.
vicinus, *Camponotus maculatus*; *Homorocoryphus*; *Scapteriscus*.
victima, *Crematogaster*.
 Victoria, *Anthrenus verbasci* in, **187**; cutworms in, **389**; *Cydia* spp. on fruit trees in, **20, 293, 390, 544, 639**; *Phthorimaea operculella* on potato in, **90, 389**; beneficial insects and biological control in, **293, 545, 639, 640**.
vigintioctomaculata, *Epilachna*.
vigintioctopunctata, *Epilachna*.
Vigna (see Cowpeas).
vigorzi, *Periclitena*.
villica, *Arctia*.
vindicus, *Microphanurus*.
 Vine, Grape, pests of, in Australia, **89, 164, 293, 365, 603**; regulations for spraying, against Trypetids in W. Australia, **131**; *Lygus spinolae* on, in Austria, **45**; pests of, in Brazil, **34**; *Paranthrene regalis* on, in China, **450**; *Polychrosis botrana* on, in Cyprus, **270**; mealybugs on, in Egypt, **507**; pests of, in France, **155**; pests of, in Germany, **46, 102, 103, 111, 155, 156, 458, 465, 496, 582, 688, 689**; locusts damaging, in Greece, **478**; *Paratetranychus punicea* on, in India, **128**; *Targionia vitis* on, in Italy, **471**; *Rhynchosia* on, in Japan, **440, 441**; *Polychrosis botrana* on, in Yugoslavia, **494**; pests of, in Palestine, **191**; *Phylloxera* on, in Poland, **403**; pests of, in Russian Union, **42, 43, 403, 688**; *Polychrosis botrana* on, in Sicily, **516**; *Phylloxera* on, in Switzerland, **46**; legislative and other measures against *Phylloxera* on, in Tunisia, **10, 11**; pests of, in Turkey, **452**; pests of, in U.S.A., **31, 165, 377**; susceptibility of varieties of, to pests, **11, 46, 191**; condition of European, not affecting infestation by *Phylloxera*, **112**; insecticides causing injury to, **45, 103**. (See Grapes).
 Vine Moths (see *Clydia ambiguella*, *Phalaenoides glycinae* and *Polychrosis botrana*).
 Vinegar, in baits for *Cydia* and vine moths, **89, 293, 494, 496, 582**.
vinitor, *Nysius*.
vinula, *Dicranura*.
violacea, *Necrobia*.
Virachola bimaculata, food-plants and control of, in Sierra Leone, **271**.
Virachola isocrates, probable parasite of, on pomegranate in India, **385**.
virens, *Coscineuta*.
virescens, *Heliothis*.
virgata, *Ferrisia* (*Pseudococcus*); *Nephrotoma*.
 Virginia, apple Aphids in, **141, 533**; pests of lima beans in, **595**; miscellaneous pests in, **380, 530, 599**; *Dendroctonus*

frontalis on *Pinus taeda* in, **377, 599** ; *Ophiostoma ulmi* on elms in, **378**.

virginica, *Diacrisia*.

viridana, *Tortrix*.

viride, *Piesma maculatum*.

viridescens, *Eupteromalus*.

viridicata, *Elaeochlora*.

viridicyaneus, *Typophorus*.

viridigrisea, *Empoasca*.

viridipes, *Phymateus*.

viridis, *Anomala* (*Euchlora*) ;

Chermes ; *Cicadella* (*Tettigoniella*) ; *Coccus* ; *Smynthurus*.

viridissima, *Palomena*.

viridula, *Nezara*.

Virus Diseases (in Plants*), relation of Aleurodids to, **94, 124, 125, 153, 186, 360, 493, 637** ; relation of Aphids to, **83, 84, 87, 88, 125, 126, 157, 158, 186, 213, 226, 236, 267, 273, 274, 280, 289, 301, 302, 303, 333, 334, 365, 369, 370, 395, 448, 472, 493, 563, 578, 590, 591, 633, 634, 652, 658, 667, 671, 672, 686, 687, 688** ; relation of Capsids to, **84, 157, 163, 303, 555** ; *Heliothis assulta* transmitting, **444** ; relation of Jassids to, **84, 157, 286, 303, 362, 412, 536, 688** ; relation of *Perkinsiella vastatrix* to, **667** ; relation of *Piesma* to, **163, 351, 352, 688** ; relation of Thysanoptera to, **360, 472, 546** ; negative experiments with other insects and, **84, 95, 636, 688** ; bibliographies and general papers on hosts and vectors of, **280, 334, 439, 456, 624** ; (in beet), legislation against introduction of, into Britain, **356**.

visci, *Diaspis*.

viteana, *Polychrosis*.

Vitex, *Bostrychoplites cornutus* in planks of, in Mauritius, **611**.

vitifoliae, *Phylloxera*.

Vitis vinifera (see Vine, Grape).

vitis, *Eriophyes* ; *Targionia*.

vitripennis, *Brachymeria* ; *Diceropecta* ; *Mormoniella*.

vitalis, *Nymphula*.

vittata, *Cassida* ; *Phyllotreta*.

vittatum, *Phaulacridium*.

vittatus, *Prepodes*.

vittula, *Phyllotreta*.

Voandzeia subterranea, *Apion ugandum* on, in Nyasaland, **126**.

volucris, *Eupeodes*.

vorax, *Anthrenus*.

Voria ruralis, parasite of *Vanessa cardui* in Transcaucasia, **587**.

vulgaris, *Cyrtogaster* ; *Gryllotalpa* (see *G. gryllotalpa*) ; *Melolontha* (see *M. melolontha*) ; *Pterostichus* (*Omasus*) ; *Zenillia* (*Phryxe*).

vulnerator, *Pristomerus*.

W.

wahlbergi, *Chilocorus*.

Walnut, pests of, in California, **261, 649, 650** ; symbiosis of *Tremex* with fungi in, in Germany, **401** ; *Cydia pomonella* on, in Italy, **4, 197** ; slightly attacked by *Caliroa limacina* in Tasmania, **21** ; *Parlatoria oleae* on, in Uzbekistan, **474**.

Walnut, Black (see *Juglans nigra*).

Walnut-shell Flour, *Bruchus obtectus* not affected by, **531** ; as a carrier for dinitro-o-cyclohexylphenol, **261, 650**.

Washington, pests of forest and shade trees in, **499, 599** ; miscellaneous pests in, **525, 541** ; orchard pests in, **343, 525** ; pests of small fruits in, **178, 280, 380** ; *Bruchus pisorum* on peas in, **325, 456** ; pests of timber in, **78, 498, 499** ; wireworms in, **378, 418** ; beneficial insects and biological control in, **379, 499** ; catalogue of Arthropods of, **525**.

Washingtonia filifera (*filamentosa*), *Dinapate wrighti* on, in California and Mexico, **569**.

Water, treatment of plant material with, against weevils, **291, 539** ; timber stored under, against Coleoptera, **397, 612** ; bamboo rendered unattractive to *Dinoderus* by, **181** ; (under pressure), against *Leptocoris trivittatus*, **374** ; *Citrus* fruit injured by treatment with, against *Aonidiella aurantii*, **292**.

Water, Hot, treatment of plants and planting material with, **396, 419, 605, 657, 665** ; other uses of, against pests, **10, 131, 359, 374**.

Water Lily (see *Nymphaea alba*).

Watermelon, not attacked by *Diaphania hyalinata* in Porto Rico, **501** ; *Etiella zinckenella* on, in Russia, **152**.

Wax Moth (see *Galleria mellonella*).

* These references are also indexed under the individual plants infected.

- Wax Moth, Lesser (see *Achroia grisella*).
- wesmaeli*, *Pristiphora* (*Lygaeonematus*).
- Wesmaëlius concinnus*, predacious on *Chermes* spp. in Britain, 262, 263.
- Wheat, wireworms on, in Britain, 96, 97; pests of, in Canada, 66, 176, 368, 600; locusts damaging, in China, 450, 451; pests of, in Czechoslovakia, 468; pests of, in Denmark, 117; pests of, in Germany, 252, 253; pests of, in Holland, 268, 269; *Locusta migratoria* damaging, in India, 560; *Contarinia tritici* on, in Italy, 3; pests of, in Japan, 208, 556; pests of, in Manchuria, 361; Dipterous pests of, in Morocco, 124, 691; pests of, in New Zealand, 547, 548; *Nomadacris septemfasciata* damaging, in Nyasaland, 126; *Syringopais temperatella* on, in Palestine, 127; slightly damaged by grasshoppers in Queensland, 602; pests of, in Russian Union, 311, 312, 315, 453, 554, 677, 680; Thysanoptera on, in Sweden, 121; pests of, in U.S.A., 83, 280, 284, 327, 374, 375, 376, 378, 542, 599; type of injury to, by Rhynchota, 352, 353, 548, 554; insects and white ear in, 680; varieties and time of sowing of, in relation to pests, 4, 66, 83, 269, 312, 327, 374, 375, 378; naphthalene and superphosphate reducing germination of, 97; intersown with other crops to protect them from wireworms, 97, 674.
- Wheat (Stored), pests of, and their control, 119, 120, 137, 196, 220, 305, 318, 319, 551, 585; *Lasioderma serricorne* not feeding on, 234.
- Wheat Gall-midges (see *Contarinia tritici* and *Sitodiplosis mosellana*).
- Wheat Strawworm (see *Harmolita grandis*).
- Wheat Thrips (see *Haplothrips tritici*).
- Wheat-stem Sawfly (see *Cephus cinctus*).
- Wheat-stem Sawfly, Black (see *Trachelus tabidis*).
- White Ear, in cereals and grasses, Arthropods and other factors associated with, 121, 151, 680.
- White-fringed Beetle (see *Naupactus leucoloma*).
- White-lined Sphinx (see *Celerio lineata*).
- Whiteflies, and plant diseases, 94, 124, 125, 153, 360, 493, 637; natural enemies of, 265, 333, 385, 437; new species of, 637.
- Whitefly, Cabbage (see *Aleurodes brassicae*).
- Whitefly, Citrus (see *Dialeurodes citri*).
- Whitefly, Greenhouse (see *Trialeurodes vaporariorum*).
- Willow (*Salix*), *Rhabdophaga saliciperda* on, in Britain, 627; pests of, in Germany, 6, 398; pests of, in Japan, 207, 440, 615; pests of, in Morocco, 196, 359; pests of, in Russian Union, 43, 152, 474; *Lachnosterna implicita* on, in Wisconsin, 32; *Ceresa bubalus* reared on, 390; attacked by *Pyrausta nubilalis*, 152.
- Willow, Cricket-bat (see *Salix alba* var. *coerulea*).
- Wilt Disease, in Lepidoptera, 499, 612; disease in *Heliothis armigera* resembling, 423.
- Wind, relation of locust flights to, 33, 109, 554, 560, 646; relation of, to flight and spread of other insects, 99, 167, 245, 330, 336, 351, 367, 409, 470, 471, 519, 614, 633, 647.
- Wine, in baits for *Cydia* and vine moths, 20, 494, 496, 582.
- Winter Moth (see *Operophtera brumata*).
- Winthemia quadripustulata*, parasite of *Monima cruda* in Poland, 438; parasite of *Protoparce* spp. in U.S.A., 253.
- Wireworm, Northern Grain (see *Corymbites aeripennis destructor*).
- Wireworm, Sand (see *Horistonotus uhleri*).
- Wireworms (Elaterids), problem of, in Britain, 96; survey of, in Siberia, 678; importance of, on potatoes in U.S.A., 418; causing white ear in oats, 680; ecology of, 96, 97, 501, 656, 679, 683; movements of, in soil, 96, 500; soil sampling for, 656, 679; measures against, 97, 177, 378, 501, 656, 683; wheat planted among crops as a protection against, 97, 674; value of trapping adults of, 410; reactions of, to arsenicals, 28; predacious on other insects, 105, 239, 398, 660, 670.

Wisconsin, miscellaneous pests in, **31-33, 323, 378**; Carabid predacious on *Lachnosterna* in, **423**.
woodi, *Acarapis*.
 Woodpeckers, destroying *Scolytus sulcatus* in U.S.A., **78**; protection of *Formica rufa* against, **564**.
 Wool Grease, uses of, in sprays, **426**.
 Woollen Goods (see Textiles).
 Woolly Apple Aphis (see *Eriosoma lanigerum*).
wrighti, *Dinapate*.

X.

X-rays, for detecting pests in seeds, **147, 440**.
Xanthium pungens, insects introduced into Australia against, **546**.
xanthodes, *Dacus* (*Notodacus*).
xanthomelaena, *Galerucella* (see *G. luteola*).
xanthomelaenae, *Tetrastichus*.
xanthophilum, *Monalonion*.
Xenosternum ornigis, parasite of *Gelechia cercerisella* in Kansas, **376**.
Xeris (see *Sirex*).
Xerophilaphis scorzonerae, measures against, on rubber-producing plants in Russia, **44, 45**; ant associated with, **44**.
Xiphydria prolongata (*dromedarius*), on willow in Britain, **562**.
xuthus, *Papilio*.
 Xylamon Preparations, tests and action of, against *Hylotrupes bajulus* in timber, **110, 202, 520**; against *Ips typographus*, **123**; penetration of, into tracheae of insects, **580**; question of toxicity of vapour of, **202, 520, 580**.
Xyleborus, on teak in Burma, **693**; not reducing yield of coffee in Java, **522, 523**.

Xyleborus badius, investigation of damage by, to puncheons exported from Br. Guiana, **328, 524**.
Xyleborus fornicatus, measures against, on tea in Formosa, **340**.
Xyleborus morstatti (on avocado), in Fiji, **641**; in Mauritius, **611**.
Xyleborus myristicae, sp. n., on nutmeg in Sumatra, **512**.
Xyleborus perforans, in Jamaica, **181, 239**; on coconut, **239**; measures against, in furniture, **181**.

Xyleborus todo, *Rhizophagus* predacious on, on *Abies* in Japan, **339**.

Xyleutes ceramicus, bionomics of, on teak and *Gmelina arborea* in Burma, **692**.

Xyleutes persona, bionomics of, on *Cassia* in Burma, **693**.

Xylia dolabriformis, pests of, in Burma, **693**.

Xylion adustus, in timber in S. Africa, **60**.

Xylocopa spp., bionomics and control of, in timber, etc., in India, **337**.

Xylodrepa quadripunctata (see *Thanatophilus*).

Xylomyges eridania, spray against, on cotton in Barbados, **661**; on vegetables in Florida, **287**; disease in, **81**; tests of baits for, **287**; used in experiments with insecticides, **241, 421, 524**.

Xylopsocus sellatus, in timber of *Acacia melanoxylon* in S. Africa, **60**.

xylostean, *Tortrix* (*Cacoecia*).

xylostei, *Hyadaphis* (see *H. sii*).

Xylotrechus quadripes, bionomics and control of, on coffee in Indo-China, **49**.

Xystrocera globosa, on *Acacia molissima* in Formosa, **558**.

Y.

Yeast, in food for *Dacus* and *Heliothis*, **345, 346, 427**; increasing populations of *Tribolium confusum* in maize meal, **80**.

Yellow-headed Spruce Sawfly (see *Pikonema alaskensis*).

ynca, *Amerrhinus*.

ypsilon, *Agrotis*.

Z.

Zabrus tenebrioides, on rye in Czechoslovakia, **468**.

Zamacra juglansiaria, bionomics of, on mulberry in Japan, **555**.

Zanthoxylum, *Papilio xuthus* on, in China, **360**; resistance of timber of, to termites in Porto Rico, **465**.

Zanzibar, virus diseases of cassava in, **95**.

Zea mays (see Maize).

zehntneri, *Elasmus*.

Zele, parasite of *Laphygma exempta* in Kenya, 666; taxonomy and new species of, 263.

Zele calcarator, parasite of *Erannis* in Crete, 172.

Zelus cervicalis, predacious on *Horistonotus uhleri* in S. Carolina, 500.

Zenillia cosmophilae, sp. n., hosts of, in Queensland, 57.

Zenillia lucorum, parasite of *Lymantria monacha* in Germany, 581.

Zenillia noctuae, sp. n., hosts of, in Queensland, 57.

Zenillia picta, parasite of *Plectoptera reflexa* in India, 612.

Zenillia vulgaris, parasite of *Sphinx pinastri* in Poland, 677.

Zeuxia cinerea, parasite of *Lixus junci* in Morocco, 283.

Zeuzera coffeae, on *Xylia dolabiformis* in Burma, 693; on tea in Formosa, 340; on coffee in India, 577; measures against, 340, 577.

Zeuzera pyrina, on fruit trees in Czechoslovakia, 469; on hazel in Greece, 452.

Zicrona coerulea, predacious on *Leptinotarsa decemlineata* in France, 107.

Zinc Arsenate, use of, against wireworms, 177.

Zinc Arsenite, tests of, in baits for grasshoppers, 134.

Zinc Chloride, unsatisfactory against *Lyctus brunneus*, 510.

Zinc Cyanamide, tests of, in baits for grasshoppers, 134.

Zinc Hydroxide, as a corrective for foliage injury by calcium arsenate, 373.

Zinc Phosphide, tests of, in baits for grasshoppers, 134. (See Phosphides.)

Zinc Sulphate, and lime, as adhesive for thiuram sulphide sprays, 532.

zinckenella, *Etiella*.

Zinckenia fascialis (see *Hymenia recurvalis*).

Zinnia, *Myzus persicae* on, in S. Rhodesia, 125; possible reservoir of tobacco rosette, 125.

Zizera (*Zizina*) *labradus* var. *mangensis*, on beans in Fiji, 641.

Zizyphus, *Carpomyia* spp. intercepted in fruits of, in Russian Union, 439.

Zizyphus jujuba, pests of, in India, 129, 503.

zizyphus, *Parlatoria*.

zlocistii, *Lepidosaphes* (*Coccomytilus*).

zonatus, *Dacus* (*Chaetodacus*).

zonellus, *Chilo*.

Zootermopsis angusticollis, in rotten wood in U.S.A., 498; bacterial diseases of, 597.

Zygina parvula (see *Erythroneura*).

Zyklon, as fumigant against cereal pests, 120, 400.

NOTICES.

Secretaries of Societies and Editors of Journals willing to exchange their publications with those of the Institute are requested to communicate with the Assistant Director.

The Annual Subscription, *in advance*, to the Review, Series A (Agricultural), is 30s. post free; Series B (Medical and Veterinary), 15s. post free. Subscriptions to the *current* Volume received after 30th June in each year will be charged at the published price, *viz.* : Series A, 36s.; Series B, 18s. Prices of Back Volumes on application.

Orders and Subscriptions should be sent direct to the Assistant Director, Imperial Institute of Entomology, 41, Queen's Gate, London, S.W.7, or through a bookseller.

Printed under the authority of HIS MAJESTY'S STATIONERY OFFICE
by the South Essex Recorders, Ltd., Ilford.

(1375) Wt. P4/3622 1700 11/40 S.E.R. Ltd. Gp. 432.